USACHPPM TODAY

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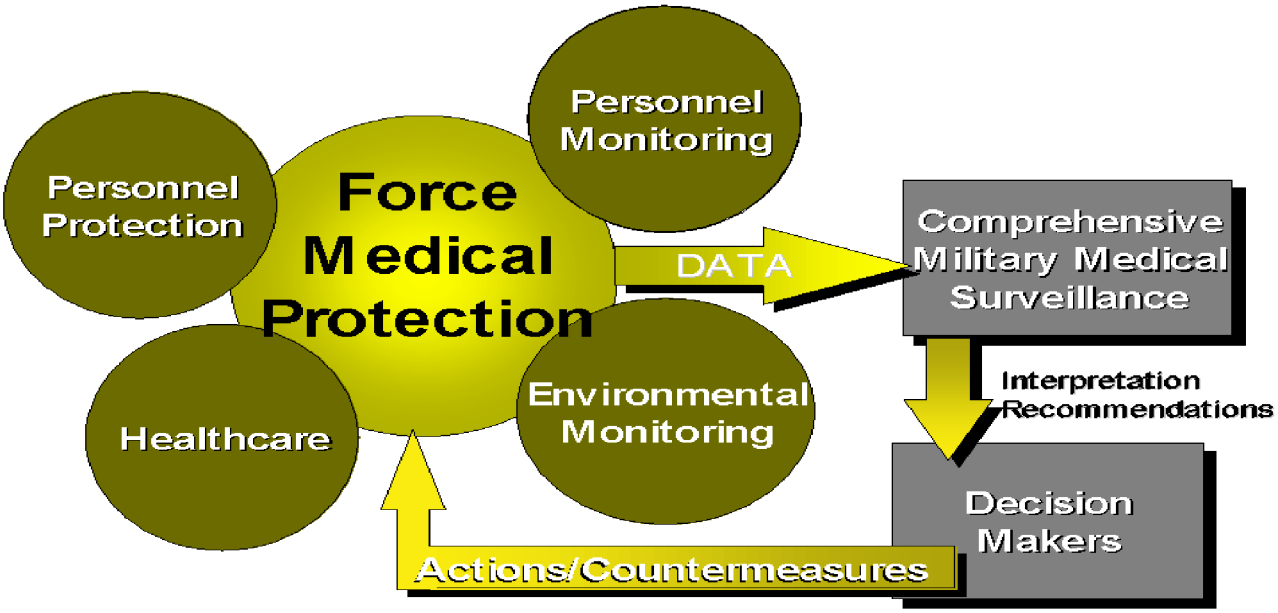
A U.S. Army Center for Health Promotion and Preventive Medicine News Bulletin

Army Force Medical Protection and Surveillance Cycle



Readiness thru Health

USACHPPM TODAY

April 1998
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LET US KNOW

USACHPPM TODAY is published by the Public Affairs Office, U.S. Army Center for Health Promotion and Preventive Medicine. It is published quarterly and will keep you up-to-date on technical trends and what is happening at USACHPPM. Please make copies for your own contacts. If you were not mailed a personal copy and you want to be on the mailing list, have comments or questions concerning USACHPPM or any of its services, or wish to obtain any of the educational materials we have available, please contact us.

We receive many calls and comments from our readers on what they read - and what they would like to read. To those of you who have responded, "Thank You." Your input is important to us. To the rest of our readers, we would like to say "Let Us Know!" If you have specific questions or if there are any topics you would like to see covered, write or call us at:

Public Affairs Office
U.S. Army Center for Health Promotion and Preventive Medicine
5158 Blackhawk Road
Aberdeen Proving Ground, Maryland 21010-5422
DSN 584-2088, 410-671-2088, or 1-800-222-9698

CC-Mail: Riley, Evelyn (if you are on cc-mail)
Internet Mail: Evelyn_Riley@chppm-ccmail.apgea.army.mil

FAX: 410-671-4784

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STEPHEN L. KISTNER
Deputy for Technical Services

Executive Editor
Stephen L. Kistner

Editor:
Ms. Evelyn B. Riley

Desktop Publishing:
Ms. Jody Rush

Photographs:
*W. Ben Bunger **III** (unless otherwise noted)*

INSIDE THIS ISSUE

Commander, USACHPPM

FORCE MEDICAL PROTECTION: A COMBAT MULTIPLIER

by: BG Patrick D. Sculley

Force Medical Protection is the newest buzzword in the Department of Defense (DOD). Despite the new terminology, the USACHPPM has a long legacy of protecting the Total Force through preventive efforts. The focus of Force Medical Protection is on sustaining combat effectiveness by achieving "full dimensional protection" through preventive personal and environmental health measures, thus minimizing the need for clinical healthcare.

Force Medical Protection consists of four operational elements: Personnel Protection, Personnel Monitoring, Environmental Monitoring, and Health Care. Each element encompasses initiatives that will lessen any deleterious health impact or promote positive outcomes. USACHPPM contributes significantly to the operational elements of Force Medical Protection.

Personnel protection is the mainstay of the USACHPPM, an organization built on the chassis of an occupational health laboratory. Our occupational health and safety personnel continue to evaluate environments, equipment, products, and processes to proactively eliminate and control external factors which may jeopardize employees' health status. Health promotion and worksite wellness programs optimize the health and fitness status of our military and civilian beneficiaries, making them more resilient to disease and injury. The command also provides clinical policy recommendations for the use of immunizations and chemoprophylaxis to protect against the scourge of arthropod-borne disease. The Vision and Hearing Conservation Programs of our Directorate of Clinical Preventive Medicine preserve acute hearing and vision and contribute to maintaining quality of life for our beneficiaries. Our Entomology Program protects soldiers, property, equipment, and the larger military community from arthropods, vector-borne disease, and adverse consequences of pest management operations.

Continual and standardized monitoring of our personnel is critical to Force Medical Protection. This monitoring allows us to evaluate the effectiveness of our countermeasures and prioritize research and development efforts. Our Directorate of Epidemiology and Disease Surveillance conducts extensive personnel monitoring. They produce the Medical Surveillance Monthly Report (MSMR), a monthly publication which provides a snapshot of the most significant health threats facing our beneficiaries and analyses of surveillance data. The Army, Air Force, and Navy Serum Repository now contains serum from all service members and is available for comparative testing. Through these resources, the USACHPPM can identify factors that correlate with health indicators and direct efforts towards preventing disease and promoting health. The Environmental Health Risk Assessment and Risk Communication Program is an integral part of personnel monitoring in which risks are identified, managed, and communicated to involved personnel as part of an organized risk management plan. An exciting new aspect of personnel monitoring is the USACHPPM application of Geographic Information System (GIS) technology. With the GIS, the USACHPPM can interrelate personnel data with environmental sampling results to document a variety of environmental exposures. This application is being increasingly fielded on deployments and training exercises and has received rave reviews.

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The third component of Force Medical Protection is environmental monitoring. The USACHPPM plays a critical role in characterizing the environment and identifying potential health threats in an area of operations. Our Directorate of Environmental Health Engineering conducted environmental sampling in more than 30 nations this past year. In Bosnia during Operation Joint Endeavor/Joint Guard, the USACHPPM collected over 4,000 samples of air, water, and soil, resulting in over 120,000 reportable analyses. Our Entomology Program enhances the environmental effort by conducting surveys of potentially disease-causing vectors and limiting their adverse impact on soldiers and operational readiness. This comprehensive characterization of the environment and knowledge of potential health threats is the standard that the American public expects and the level necessary to maintain public confidence in the military and the Military Health System (MHS).

The final component of Force Medical Protection, health care, falls under the direct purview of clinical, direct care commands, such as TDA Medical Activities and Medical Centers as well as TO&E hospitals. Though USACHPPM personnel do not serve in a clinical capacity, they do provide guidance, consultation, and services to these organizations. Our Directorate of Health Promotion and Wellness spearheaded a tri-service effort to implement Put Prevention into Practice (PPIP) into clinical preventive services; PPIP will assist direct-care providers reinforce the health promotion and preventive-care message during each patient encounter. The USACHPPM's efforts to promote self-care and healthy behaviors will have the added benefit of decreasing the need for professional care and streamlining access for those individuals requiring it.

The realization of full dimension medical protection to sustain combat effectiveness and mitigate disease and non-battle injury (DNBI) force attrition depends upon the development of automated databases to integrate data from the various components of Force Medical Protection (personnel protection, personnel monitoring, environmental monitoring, and health care information). Our Comprehensive Military Medical Surveillance System integrates these data, documenting all relevant exposures and medical events and gaining total situational awareness of the health threats facing our soldiers. An integrated system will make epidemiologic studies much more rapid and thus, of more value to decision makers. The integrated surveillance system will provide combatant commanders and policy and decision makers with the necessary information to implement real-time preventive countermeasures to sustain theater forces. Furthermore, the surveillance system ensures that service members receive proper medical treatment that is consistent with their medical and military histories. The interpretations and recommendations from the surveillance system will be the impetus for future doctrine and medical policies.

The success of Force Medical Protection hinges on the MHS's ability to track an individual from accession through his entire career, capturing information on garrison conditions, deployments, hospitalizations, and other relevant factors. This information must be routinely gathered and entered into the surveillance system so the USACHPPM can conduct rapid, comprehensive epidemiologic studies and provide sound-health recommendations.

Commanders have the ultimate responsibility for the health and welfare of their troops; however, armed with the available resources and support from health organizations, such as the USACHPPM, commanders will be able to utilize health promotion and preventive medicine programs and countermeasures to effectively manage risk and minimize any adverse impacts on soldiers and operational readiness. With the great work of the USACHPPM, the Army and DOD can achieve "readiness thru health!"

DISTINGUISHED HONOR GRADUATE

COL William T. Broadwater, USACHPPM-EUR Commander, congratulates CPT William P. Argo

CPT William P. Argo, Radiation Protection Division, USACHPM-EUR, took top honors as distinguished honor graduate of the Nuclear Emergency Team Operations Course, Kirkland Air Force Base, NM. He is the first officer from all military services to ever receive this recognition. When asked about his accomplishment at the NETOPS course, Argo replied, "There was no special formula for my success at the school. I just worked very hard at learning the content and performing the hands-on portions correctly. The course takes on special meaning when you realize that the ramifications of everything you do as a member of the nuclear emergency team impacts not just on the health, but also possibly the lives of friends and fellow soldiers."

NETOPS is a highly intensive two-week course that provides detailed training for emergency team members required to respond to nuclear weapon accidents. It consists of a week of classroom training on the hazards associated with a nuclear weapon accident and a week of field instruction at one of the three contaminated ranges at Kirtland AFB.

Argo is a native of Georgia and graduate of Francis Marion University. He has received similar accolades as a graduate of ROTC and Officer Advanced Course as well as Air Assault School.

FEDERAL ENGINEER-OF-THE-YEAR AWARD

As part of the National Society of Professional Engineer's (NSPE) Week celebration, the 19th Annual Federal Engineer of the Year Award Ceremony was held on Thursday, 26 February 1998. The event is sponsored by the Professional Engineers in Government, and this year was hosted by NSPE President Kenneth B. Walch, PE. The U.S. Army Medical Command (MEDCOM) is proud to have Jerry A. Valcik, PE, DEE, selected as the 1998 Federal Engineer of the Year.

Valcik represented the MEDCOM in which he is the Acting Program Manager of the Water Supply Management Program at USACHPPM, Aberdeen Proving Ground, MD. The Program provides technical support to ensure safe, high quality drinking water throughout the Army and the Department of Defense (DOD).

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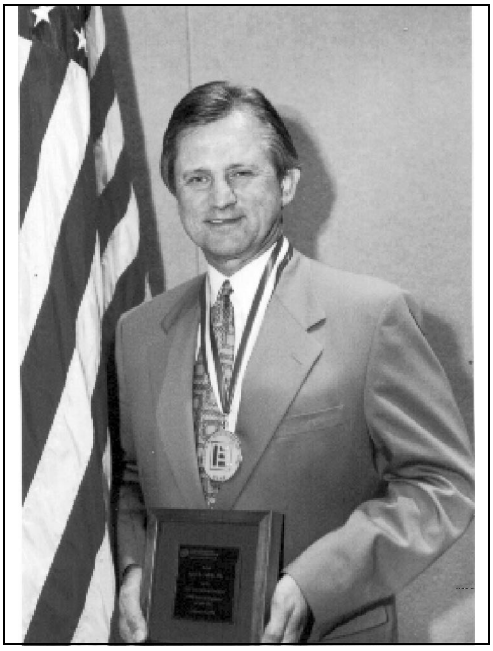


The support centers on military personnel in the field and also focuses upon military personnel, civilians, and family members serviced by the Army and other military and civilian fixed facility drinking water systems.

Valcik has made significant and lasting contributions to the quality of drinking water at DOD installations around the world and even in the U.S. civilian community. He is the single most recognized and respected word in drinking water throughout the U.S. Army. He has, on innumerable occasions, provided prompt, superlative response to a myriad of highly technical and complex issues relating to drinking water supplies. He played a leading role in developing drinking water criteria for overseas Defense installations which has increased Army-level attention on requirements to continuously provide safe drinking water at mission essential locations. He developed an approach for the comprehensive evaluation of water systems from source-to-tap. He has presented numerous technical papers at professional meetings on various drinking water issues pertaining to the DOD community. His experience, extraordinary technical skills, dedication to the engineering profession, leadership, and commitment to the people he works with, have distinguished him as the premier drinking water subject matter expert in the Department of the Army.

Valcik holds a B.S. in Civil Engineering from the University of Maryland and M.S. in Sanitary Engineering from the University of Illinois. He is a registered Professional Engineer in Maryland. He is a member of the NSPE, the American Society of Civil Engineers, the Conference of Federal Environmental Engineers, and a Life Member of the American Water Works Association. Over the years, he has been extremely active in several professional organizations. Within the Maryland Society of NSPE, he has served in virtually every possible leadership position, including President of the State Society and one of its constituent chapters, the Susquehanna Chapter. For years, he has served as the Army representative to the National Sanitation Foundation Drinking Water Treatment Units Committee. At the local level, he is the professional engineering community representative to the Harford Community College Engineering Advisory Committee which endeavors to stimulate interest in pursuing careers in engineering.

His awards and honors include Diplomate status in the American Academy of Environmental Engineers since 1979, the Silver Award for the Outstanding Professional granted by the Baltimore Federal Executive Board in 1997, a Master Consultant designation at the USACHPPM since 1989, and Young Engineer of the Year Award from the Engineers Week Council of Baltimore in 1978.

Valcik competed with 26 nominees from various Federal civilian and military agencies, and was listed as one of the 10 finalists. At the luncheon held at the Crystal Gateway Marriot in Alexandria, Valcik was surprised to be named the Federal Engineer of the Year and to receive the Founders Medallion. He exclaimed, "It's an understatement to say I'm really pleased." He went on to say, "This recognition is possible because of the support I've enjoyed from many professionals in and out of Government over a lifetime. I take great pride and have a great satisfaction in my role to ensure safe drinking water for our military and family members who represent the greatest force for good throughout the world." In addition, he said. "Those of us who are older owe it to our profession to mentor those following us since they are the future of engineering".

VICE PRESIDENT, MARYLAND COLLEGE OF OCCUPATIONAL AND ENVIRONMENTAL MEDICINE

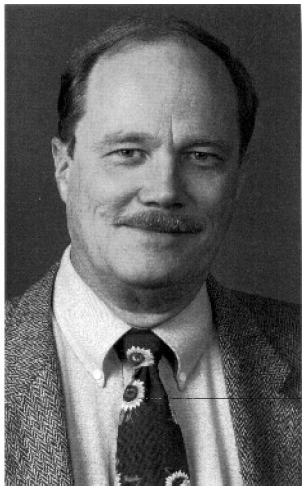
Dr. Coleen Weese was elected Vice President of the Maryland College of Occupational and Environmental Medicine. This state component of the American College of Occupational and Environmental Medicine is comprised of 165 physicians practicing occupational medicine in industry, academia, local and federal government positions, and private practice. The College sponsors continuing medical education seminars for physicians, serves as a liaison with the state legislature to provide testimony on issues of workers compensation reform and other health-related initiatives, and advances the cause of worker and community safety and health in the state of Maryland. She will advance to the presidency of the Maryland College next year.

Weese currently works as an occupational and environmental medicine physician in the Occupational and Environmental Program. A large portion of her duties consist of the medical evaluation of health risk assessments and related issues. She also evaluates the health risks associated with environmental impacts on deployed soldiers and military unique chemical agents. She is particularly interested in methods and surveillance efforts to assess long term health outcomes from low-level exposures to deployed troops and will present on this topic at Prevention 98, the annual meeting of the American College of Preventive Medicine. She has published several articles on related topics.

Weese entered Active Duty following medical training at the University of Southern California School of Medicine where she was on a military health professions scholarship. She did a transitional internship at Tripler Army Medical Center, HI, and proceeded to Germany as a Brigade Surgeon for 42nd Field Artillery. Following this assignment, she became a clinic and medical detachment commander at Butzbach, Germany. She was promoted to major below the zone, returned to the U.S. to earn a Masters of Public Health at John's Hopkins, and completed her preventive medicine residency at Madigan Army Medical Center, WA. She was assigned to the U.S. Army Environmental Hygiene Agency in 1992 serving as an occupational medicine staff officer, and Chief, Disease Control and Prevention. Weese is currently board-certified from the American Board of Preventive Medicine in preventive medicine and occupational medicine. She left the Army in 1995 as a major and returned as a civilian.

In support of academia, she teaches epidemiology to Physician's Assistant students at Essex Community College, environmental medicine to occupational medicine residents, and biologic hazards to occupational health nurses on an annual basis. She teaches religious education to first graders at the Edgewood Chapel. She is the mother of six, ranging from one to fifteen years of age, and is married to Max Weese, an occupational medicine physician's assistant.

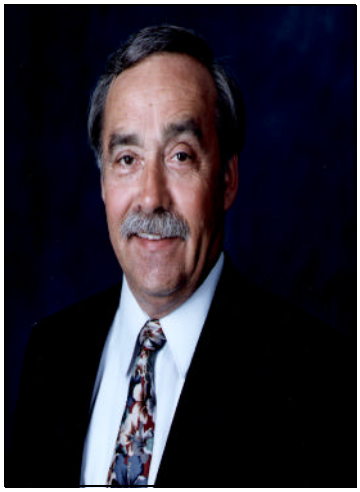
VICE CHAIR, AMERICAN CONFERENCE OF GOVERNMENTAL INDUSTRIAL HYGIENISTS



The American Conference of Governmental Industrial Hygienists (ACGIH) Nominating Committee has selected Dr. David H. Sliney as a candidate for Vice Chair. Sliney received his B.S. in physics from Virginia Tech; M.S. in physics and radiology health from Emory University; and his Ph.D. in biophysics and medical physics from the Institute of Ophthalmology, University of London. He began his career as a nuclear medical science officer in 1965 at the U.S. Army Environmental Hygiene Agency in the Laser Microwave Division and is currently the Program Manager, Laser/Optical Radiation Program, USACHPPM. He has been a member of ACGIH since 1966 and has served on numerous committees for many organizations. He has published over 200 scientific papers and co-authored two books (*Safety with Lasers and Other Optical Sources*, and *Medical Lasers and Their Safe Use*.) He has also served as an editor of *Health Physics* for 10 years and is currently on the editorial board of five other journals, including *Applied Occupational and Environmental Hygiene*. He is a member of 11 professional societies.

Sliney has been particularly active internationally, having served as a temporary advisor to the World Health Organization on several radiation topics, magnetic fields, and noise, and has authored several occupational health publications for the International Labor Organization. He has also served as a Chair or member on standards committees of the International Electrotechnical Commission and the International Standards Organization. He is one of the three U.S. members on the International Commission on Non-Ionizing Radiation. He also is a member of the radiation committee of the International Commission on Occupational Health, and has served as the Director of Division 6 (Photobiology) of the International Commission on Illumination.

VICE CHAIR, AMERICAN SOCIETY FOR TESTING AND MATERIALS COMMITTEE



Mr. Kenneth Williams, a USACHPPM Master Consultant in Laboratory Sciences, was elected as Vice Chairman, American Society for Testing and Materials (ASTM) Committee D22 on Sampling and Analysis of Atmospheres. This Committee is responsible for establishing sampling and analysis methods for indoor, ambient, and point source air pollution. Williams also serves as the Vice Chairman, ASTM Subcommittee D-22.04 for the Collection and Analysis of Workplace Atmospheres.

The ASTM is made up of leading scientists in multiple disciplines for the purpose of establishing standard scientific procedures. Williams has been an active member of D22 for over 20 years. In that period, he has reviewed and contributed to over 200 methods. He has also developed seven methods that are currently accepted ASTM standard methods for the collection and analysis of workplace atmospheres. He is a firm believer in the value of ASTM committee membership. A major benefit, according to Williams, is that it offers a way to expand knowledge through association and personal contacts with peers from the private sector of the scientific community. There are subcommittees in ASTM that cover nearly every environmental and occupational health specialty.

THE FIRST COMBINED ARMY PREVENTIVE MEDICINE CONFERENCE

The first Army Preventive Medicine Conference will be held 24 - 28 August, Hyatt Regency Crown Center, Kansas City, MO. This conference will provide the Army preventive medicine community with the opportunity to confront the emerging issues of this year's theme, Meeting the Force Medical Protection Challenge.

Applicants should be working in a preventive medicine field, i.e. occupational medicine, occupational health, preventive medicine, field preventive medicine, industrial hygiene, environmental health, radiation protection/health physics, and health promotion and wellness. It is open to Active Duty, Reserve Component military, and DA civilian employees working at installations, TO&E units, R&D, and other staff positions both CONUS and overseas.

The conference is structured to provide a combined (plenary) session the first day and discipline-specific tracks following. The discipline-specific tracks include Preventive Medicine Physician; Environmental Science and Engineering/ Health Physics; Industrial Hygiene; and Health Promotion and Wellness. The content of the individual tracks is under construction. The conference will give preventive medicine professionals the opportunity to interact and collectively address issues.

For those having access to the Internet, the Training Office website has current information. Links will be provided to the individual tract website for additional information as they become available.

This site provides separate track application for your convenience. You may download the application in a WordPerfect for Windows format, or use the on-line application. The address is: http://chppm-www.apgea.army.mil/trng/datepage.htm

Those without Internet access can send an e-mail message to Ms. Doris Knapp: doris_knapp@chppm-ccmail.apgea.army.mil Provide your specific track, phone number and a fax number, both commercial and DSN. POC: Ms. Doris Knapp, DSN 584-8139, 410-671-8139, or 1-800-222-9698.

ELECTRONIC INFORMATION RESOURCES

Mr. Dennis A. Morgan (Industrial Hygienist, Industrial Hygiene Management Program) published a peer-reviewed journal manuscript entitled "U.S. Army Center for Health Promotion and Preventive Medicine's Electronic Information Resources" in *Applied Occupational and Environmental Hygiene* (the professional journal of the American Conference of Governmental Industrial Hygienists). His report highlights electronic information resources created through productive partnerships, continuous improvement, and technology transfer. These USACHPPM products and services, primarily in the form of World-Wide Web sites and software databases, contain data collected, analyzed, and reported during collaborative studies and matrixed projects.

For instance, the U.S. Army Industrial Hygiene Program's web site is designed to assist industrial hygienists in making more fully informed decisions by providing access to technical material and current policy relating to industrial hygiene, safety, occupational health, preventive medicine, and environmental protection. The Defense Occupational Health Readiness System (DOHRS) Program is using a tri-service collaborative approach to combine the approved value-added functionality from the Army, Navy, and Air Force systems into a single software product to satisfy the needs of industrial hygiene, hearing conservation, and occupational healthcare providers. The Military Item Disposal Instructions/Military Environmental Information Source (MIDI/MEIS) database, distributed via CD-ROM to 8,000 military and government users annually, is a software application designed to provide methods of destruction for the disposal of hazardous and non-hazardous items. The Health Risk Appraisal database measures the Healthy People 2000 objectives, supports the Put Prevention Into Practice Program, and defines health risk trends. The Health Hazard Assessment database provides recommendations to anticipate, eliminate, and control health hazards before systems are developed and operational. The web site addresses include:

USACHPPM - http://chppm-www.apgea.army.mil/

Army IH Program -
http://chppm-www.apgea.army.mil/Armyih/

DOHRS - http://chppm-www.apgea.army.mil/DOHRS/

Entomology Program -
http://chppm-www.apgea.army.mil/ento/index.htm

Hazardous & Medical Waste Program -
http://chppm-meis.apgea.army.mil/

MIDI/MEIS -
http://chppm-meis.apgea.army.mil/hmwp/midi_team.html

Health Risk Appraisal/Cardiovascular Screening System -
http://chppm-www.apgea.army.mil/dhpw/

Health Hazard Assessment Database -
http://chppm-www.apgea.army.mil/hha/

Laboratory Information Management System (LIMS) Database -
http://chppm-www.apgea.army.mil/dls/

USACHPPM-South -
http://chppm-www.apgea.army.mil/dsa-s/dsas2.htm

USACHPPM-West -
http://chppm-www.apgea.army.mil/dsa-west/

USACHPPM's resources are poised to meet and exceed the needs of an occupational and environmental hygiene professional community that has become technically savvy in its use of computer hardware and software. To obtain reprints of the manuscript, contact the Industrial Hygiene Management Program by telephone (410) 671-2439 or facsimile (410) 612-8795.

Directorate of Clinical Preventive Medicine

TRI-SERVICE VISION CONSERVATION AND READINESS

***Vision ready is mission ready*!**

EYE SAFETY: HOW WELL ARE YOU PREPARED?

Would you know how to help a co-worker grimacing in pain from a chemical splash to the eyes? Do you know how to prevent eye injuries? Unfortunately, evidence is clear that many people cannot properly answer these questions. You must react quickly to eye emergencies such as chemical burns because some chemicals can fully penetrate the eye and cause devastating damage within 10 seconds.

Studies conducted by the staff of the Tri-Service Vision Conservation and Readiness Program (TVCRP) show that more than 90 percent of eye injuries are preventable. In fact, a recent survey by the Bureau of Labor statistics reveals that 60 percent of workers with eye injuries wore no eye protection at the time of injury. Among 40 percent of those workers who wore eye protection, 40 percent wore the wrong type. This results in avoidable pain, visual disability, and lost productivity for thousands of workers every year.

The TVCRP

The TVCRP exists in part to promote eye safety and prevent costly eye injuries. "We give people responsible for eye safety and vision conservation the education and information they need to establish and maintain effective vision conservation and readiness programs," said LTC David Hsieh, TVCRP manager. The TVCRP offers a variety of education including basic and advanced Vision Conservation and Readiness courses. These one-week courses target Federal Service professional personnel involved in eye safety and vision conservation such as occupational health nurses, industrial hygienists, safety officers, optometrists, and bio-environmental engineers.

The TVCRP is staffed by Army optometrist, LTC Hsieh; Navy optometrist, CDR Lee Cornforth; Air Force optometrist, Lt Col Robert Buckingham; and civilian optometrist, Dr. James Stout. LTC Rob Drescher oversees the USACHPPM-Europe Vision Conservation and Readiness Program at Landstuhl Germany.

Their mission is to optimize vision readiness for DOD healthcare beneficiaries. The TVCRP has five major objectives:

- Develop and revise vision conservation and readiness policy, doctrine and standards.
- Conduct special studies and surveillance to support improved vision conservation and readiness.
- Provide vision conservation and readiness education.

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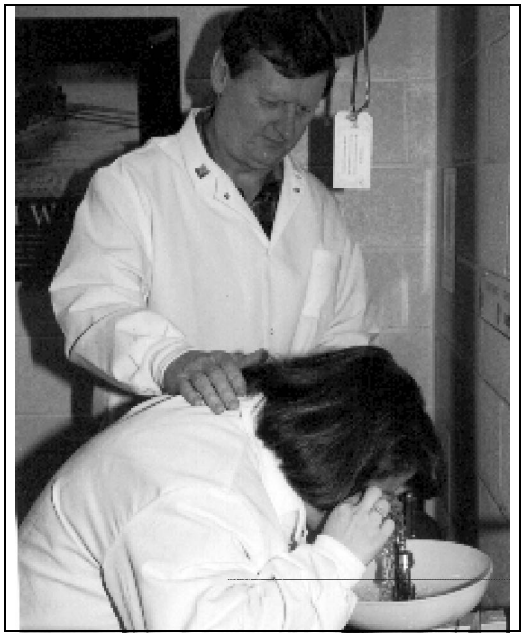
- Assist installation vision conservation and readiness programs with information and advice.

- Develop vision services business process improvements augmented by automation.

These objectives focus on areas identified for improvement. For example, two areas targeted for improvement are in vision readiness and eye injury prevention: After-action reports from Operations Desert Shield/Storm (ODS/S) noted that 23 percent of the deploying troops were not visually ready (did not have the required visual acuity for their job assignment). Over 44 percent of individuals requiring visual correction were not optically ready (did not have the required number and type of eyewear). From 1992 to 1997, independent surveys of several installations from each of the three services indicated similar vision and optical readiness status. Eye injuries as a percentage of total war injuries are on the rise. Historically, less than 10 percent of all war injuries involved eyes. This rose to 13 percent during ODS/S.



Employee using eye-wash fountain.

TVCRP Products and Services

To improve in these and other areas of vision services, the TVCRP is involved in many activities of vision conservation and readiness. Examples of a few of these involved activities are:

•Created DA Pam 40-506, Vision Conservation and Readiness (to replace TB MED 506, Occupational Vision) for the Army.

•Created vision conservation and readiness information and education handouts. An example, Ten Commandments of Eye Safety, is shown in this article.

•Input to AFOSHI 48-17, Occupational Health Program for the Air Force.

•Input to OPNAVINST 5100.23E, Navy Occupational Safety and Health Program Manual.

•Input to American National Standards Institute (ANSI) committee.

•Policy and doctrine development such as DA Pam 40-506, Vision Conservation and Readiness to replace TB MED 506, Occupational Vision, for the Army.

•Publication of vision conservation and readiness information and education publications such as the Ten Commandments of Eye Safety.

•Standards development such as the Tri-Service Vision, Optical and Eye Health Readiness (VOER) standards which will contribute to provide a consolidated cost effective program that results in ongoing maximum vision readiness.

•Research such as the Conducting a DOD Health Affairs sponsored Tri-Service Readiness Study. This study is assessing warfighters' vision readiness in peace time (current effort), operations other than war (Bosnia) and war time (ODS).

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•Collecting and analyzing eye injury data to identify countermeasures against costly eye injuries and provide information for fact-based preventive medicine policy decisions.
•Analyzing a three-installation eye injury study of more than 17,000 active duty Army personnel. This study will reveal eye injury risks among occupational specialties.
•Surveillance such as collection and analysis eye injury data to identify countermeasures against costly eye injuries and provide information for fact-based preventive medicine policy decisions. Analysis of eye injuries among 17,000 active duty Army personnel from three installations is underway.
•Program evaluation such as evaluation of the efficacy of the current mustard agent surveillance program with a retrospective record review of 632 records of mustard agent workers in four military installations. Policy change resulting from this study lead to improved use of medical and personnel resources.
•Education such as the Vision Conservation and Readiness Course attended by 238 Federal service employees to function as Vision Conservation and Readiness Officers for local programs.
•Information exchange such as the TVCRP hosts a world wide web page. This site provides ready access to a wide variety of vision conservation and readiness information. From this web site, the general populace may view or download information such as "Rules for Use and Selecting Proper Safety Eyewear", "Visual Considerations of Video Display Terminal Use," and Vision Conservation and Readiness Course lectures.
•Consultation such as assisting installation local activity vision conservation and readiness program managers personnel. This ranges from supplying basic technical information to unique problem solving. Assistance is also available to other occupational safety and health professionals who do not have a Vision Conservation and Readiness Officer on their installation. Occasionally, when resources permit, the TVCRP conducts on-site staff assistance services. These services aim to eliminate the "inspection" oriented visit and replace it with a "mission enabling" endeavor.
•Automation of vision services. The TVCRP is the action office for Developing the DOD Vision Information System (DVIS). This Automated Information System (AIS) will support vision optical and eye health readiness improvements, provide cost effective clinical vision care, provide indicators for countermeasures against costly eye injuries, and enhance vision care resource management and expert referencing. Sponsored by DOD Health Affairs, DVIS will be one of the lead specialty systems to be integrated in the next generation Composite Health Care System (CHCS II) as part of the Medical Health System overall automation effort. CHCS II will allow worldwide access to computerized patient records.

With all of the products and services available, the TVCRP staff is prepared to assist with all of your vision conservation and readiness information and educational needs. For more information, visit their web site at:
http://chppm-www.apgea.army.mil/dcpm/vcp/vcp.htm
POC: CDR Lee Cornforth, DSN 584-2714, 410-671-2714, or 1-800-222-9698.

Ten Commandments of Eye Safety

1. Observe eye safety signs and procedures.
2. Always wear appropriate American National Standards Institute Z87 approved eye protection in clean and serviceable condition for mechanical, chemical, biological, or radiant energy hazards.
3. Never wear contact lenses where smoke, dust, and chemical fumes exist nor in basic training nor deployment.
4. Wear American Society of Testing and Material F803 approved eye guards that contain lenses to play racquet sports.
5. Know where the eye wash fountain is and know how to use and maintain it.
6. Know basic first aid for eye injury so you may help yourself and your fellow worker.
7. Have an eye examination by your eye doctor every two or three years, or sooner as directed, to ensure you have good vision to do your job safely and efficiently.
8. Report to your supervisor hazards and unsafe practices that may cause eye injury.
9. Encourage your fellow workers to practice eye safety and receive annual eye safety training.
10. Use common sense in all activities potentially hazardous to the eye.

RECRUIT HEALTH SYMPOSIUM 4-7 MAY

The 4th Annual Recruit and Trainee Healthcare Symposium will be hosted by the U. S. Coast Guard (USCG) at the Atlantic City Convention Center. The 1998 conference will be held May 4th through noon Thursday, May 7th.

The theme is Meeting Operational Demands. It is hoped to continue the excellence of this gathering of healthcare providers, preventive medicine clinicians and researchers, trainers, recruiters, and policy makers. This symposium has proved to be a valuable place to exchange ideas for all disciplines involved in the basic training of military recruits. This year the planners have ambitions of expanding the meeting to include breakout sessions for training and recruiting attendees.

Representatives from the United Kingdom have been invited. Attendees will have an opportunity to tour the USCG Recruit Training Center in Cape May. The draft agenda includes the following areas of interest:

- **Attrition Reduction Initiatives**
- **Recruit Physical Fitness**
- **Recruit Injuries**
- **Immunizations(Varcella, Hep A/B, Anthrax and beyond)**
- **Recruit Mental Health Issues**
- **Preventive Health and Health Promotion**
- **Updates, new initiatives, research info**
- **MEPS screening--updates, problems, new initiatives**
- **Waiver Issues--Is any one collecting data? New initiatives**
- **Separation of the sexes for basic training- What now?**
- **New Training Initiatives (USMC's Crucible, and the USCG Eagle Imitative)**
- **Recruiting Challenges**

The planners hope to present a variety of speakers (clinical, research, policy, and operational). They are now actively soliciting speakers from all services and disciplines. A poster session is also planned.

The USCG point of contact for more information and any interested presenter is LCDR Maura K. Dollymore, M.D. USCG TRACEN Cape May, One Munro Ave, Cape May, NJ 0820, 609-898-6959, FAX 609-898-6962
e-mail: dollymor@algorithms.com

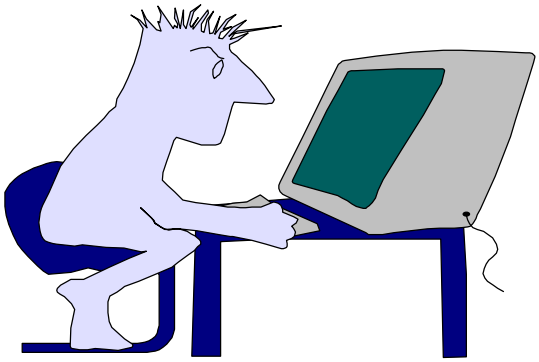
ARMY VETERANS HEARING LOSS DISABILITY UPDATE

Since 1986, when the Department of Veterans Affairs began to report hearing loss disability by individual service, the Army has shown the largest decrease in the number of primary hearing loss cases.

	Primary Cases	Secondary Cases
Army	**-13.6%**	**+33.3%**
Marines	**+9.2%**	**+60.2%**
Navy	**-6.5%**	**+150.0%**
Air Force	**+17.2%**	**+28.7%**

The increase in secondary cases among all the services is attributed in part to the liberalization of the disability formula in 1987. In 1997, $271,601,856 were reported for compensation costs in all services. The Army accounts for 65 percent of these costs, 61 percent (35,237) of all primary cases, and 54 percent (145,300) of all cases of primary and secondary disability. This accounting is 6 percent less than total Army numbers served since and including World War II (i.e., 60 percent of all service members). If the Army had increased at the same percentage as the Marines (a service branch with similar noise exposures), the additional cases in each year could be multiplied by the average cost of disability in that year. From 1986-1997, $220.719,952 can be projected in cost avoidance for the Army. POC: Dr. Doug Ohlin, DSN 584-3797, 410-671-3797, or 1-800-222-9698.

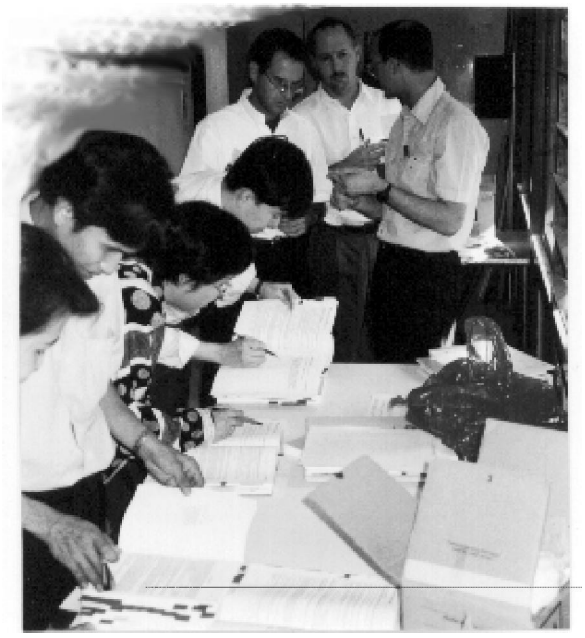
WE WANT TO HEAR FROM YOU....



We want to know what you think. Please send any comments or requests for articles on a specific subject to:

Commander
USACHPPM
ATTN: MCHB-CG-PAO
5158 Blackhawk Road
APG, MD 21010-5422

TRANSPORT OF BIOMEDICAL MATERIAL



Thai and U.S. military students working on a practical exercise

The Hazardous and Medical Waste Program conducted a course entitled Transport of Biomedical Material at the Armed Forces Research Institute of Medical Services (AFRIMS), Bangkok, Thailand. Twenty-eight personnel (principally Thai nationals) attended. This is the first cross-cultural course presented by this Program and despite the language challenges, it was a success with 18 of the 28 students passing. The on-site training course presented a cost savings to the Army of approximately $168,000 (money saved by transporting two instructors to Thailand versus 28 students to the U.S.). Because the training certifies personnel to properly package and ship infectious agents from one facility to another, it also reduces the risk of a major international disaster involving select agents transported from AFRIMS back to the U.S. for analysis.

Since starting the course in 1995, the Program has trained and certified over 230 healthcare facility personnel in all branches of the U.S. Armed Services to safely transport biomedical material around the world. In addition to teaching the course in Thailand, the Program has also conducted tri-service training on this topic in Japan, Hawaii, and Germany. The on-site training has saved the DOD thousands of dollars in training costs and promoted the safe transport of infectious materials worldwide. POC: Ms. Annjanette Ellison, DSN 584-3651, 410-671-3651, or 1-800-222-9698.

SMALL ARMS RANGE NOISE ASSESSMENT MODEL

For over a year, the Environmental Noise Program has been working with the U.S. Army Construction Engineering Research Laboratories (CERL) to test a computer model for predicting the annoyance of noise from small arms ranges. The model is known by the acronym SARNAM. Planning for SARNAM dates to 1995 when CERL and USACHPPM experts met to discuss the adequacy of the small arms range noise model used by the Swiss government. (USACHPPM had worked with the Swiss to translate the documentation from German.) Together, it was decided to combine the best features of the Swiss model with improvements from CERL acoustics research. An important feature from the Swiss model was a way of treating the propellant blast and

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supersonic rifle bullet shock wave as separate sound sources. Unique features from CERL research included the acoustic effects of berms, barriers, baffles or housing, a new one-third octave band noise data base on Army small arms, and a system for predicting the effects of meteorology on sound propagation.

During 1997, SARNAM was tested in two ways. First, it was used to develop noise contour maps for a number of small arms ranges. Through this wide range of sample cases, programming bugs cropped up and were eliminated. Second, site noise measurements were made and compared with the predictions of the model. The on-site measurements were funded by the National Guard Bureau. Although testing SARNAM is still in process, this new model has taken its place alongside NOISEMAP (the noise assessment model for military airfields) and BNOISE (the noise assessment model for large caliber weapons noise) as an important tool for compliance with the National Environmental Policy Act. POC: Dr. Nelson Lewis, DSN 584-3829, 410-671-3829, or 1-800-222-9698.

INTERNATIONAL STANDARDS ORGANIZATION (ISO) 14000

The term ISO 14000 Standard, Environmental Management Systems - Specification with Guidance for Use, refers to a series of voluntary international standards pertaining to environmental management systems (EMS). It was adopted by ISO in September 1996. The U.S. representative to this international body is the American National Standards Institute. In December 1997, USACHPPM contracted with a private vendor [approved by the Registration Accreditation Board (RAB), the U.S. accrediting body for all aspects of ISO 14000 certification] to present the 40-hour ISO 14000 Lead Auditor Training Course. Successful completion of this training (or equivalent) is a prerequisite to becoming certified by the RAB as an ISO 14000 EMS auditor. This course, conducted at USACHPPM, was attended by the following personnel from several technical programs at USACHPPM: Mr. James D. Wood, Ms. Linda Baetz, Ms. Patricia O. Rippey, MAJ Jeffery C. Springer, Mr. Richard D. Wells, Mr. Kenneth A. Lancellotti, Ms. Kim M. Fleischmann, Ms. Rose M. Overturf, Mr. Donald F. Wood Jr, Mr. Patrick R. Monahan, Mr. Kenneth Quirk, Mr. Andrew R. Maly, and Mr. John K. Brokaw. One Major Army Command (MACOM) representative, Mr. David Keys, Military District of Washington (MDW), also attended. With the exception of two attendees, the attendees had extensive environmental compliance auditing experience and had served as Environmental Compliance Assessment System (ECAS) team leaders.

In February, Baetz and Wood (James) applied their EMS auditing skills by conducting an ISO 14000 EMS audit and consultation at Walter Reed Army Medical Center (WRAMC). They both have applications for certification as ISO 14000 Lead Auditors pending before the RAB. The request for the ISO 14000 audit came ☞

from the newly-established WRAMC Environmental Office (a separate office reporting directly to the Garrison Commander). The WRAMC Environmental Office hopes to use the results of this audit/consultation to more effectively manage the various environmental programs using the framework of ISO 14000. Mr. Gilbert Gonzalez, U.S. Army Medical Command (MEDCOM) Environmental Office, was also at WRAMC to work with the USACHPPM audit team and address resource issues.

In addition to MDW, other MACOMs are interested in evaluating the potential utilizing the ISO 14000 framework to establish more EMSs at their installations. Wood and Baetz will conduct a similar ISO 14000 EMS audit/consultation for the U.S. Army Training and Doctrine Command (TRADOC) during an upcoming ECAS assessment. Ms. Michele Cleland, TRADOC Environmental Office, will be working with the USACHPPM EMS audit team. Cleland, Wood, and Baetz hope to utilize findings from the ECAS assessment team members to assist with their evaluation of the environmental program management/EMS.

Wood and David Keys, MDW Environmental Office, will conduct a similar effort during one of the upcoming MDW ECAS assessments. Mr. Matt Andrews, ECAS Team Leader, U.S. Army Environmental Center (AEC), endorses this partnership between the ECAS program and possible implementation of the ISO 14000 Standard at Army installations. Andrews is currently working with USACHPPM to conduct another ISO 14000 Lead Auditor Training Course in April. The primary intent for this follow-up course would be to train MACOM environmental staffs on EMS auditing procedures. Several USACHPPM personnel will also attend the course.

In addition to these USACHPPM/AEC/ MACOM efforts, the potential benefits to DOD installations are being evaluated at the highest levels. In September 1997, Ms. Sherri W. Goodman, Deputy Under Secretary of Defense (Environmental Security) directed the establishment of an EMS Committee and analytical tools to evaluate the costs and benefits associated with implementing the ISO 14000 Standard at DOD installations. The DOD EMS Committee has instituted a 2-year pilot study at various installations (including several Army installations).

The Army portion of this ISO 14000 pilot study is being headed by the Office of the Directorate of Environmental Programs (ODEP) and the Army Environmental Policy Institute (AEPI). Both USACHPPM and AEC are actively involved with the ODEP/AEPI EMS Committee. Wood and Andrews are the designated USACHPPM and AEC representatives, respectively. POC: Mr. James D. Wood, DSN 584-2509, 410-671-2509, or 1-800-222-9698.

RE-EMERGENCE OF MALARIA IN KOREA

The re-emergence of *P. vivax* malaria in the Republic of Korea is of continuing interest and concern. While vector abatement programs, increased provider awareness, and emphasis on personal protective measures have helped to control the spread of malaria, incidence rates continued to increase in USFK soldiers in 1997. A presentation on the current status of malaria in Korea was given at the Interagency Malaria Meeting, Walter Reed Army Institute of Research, in February, and at the Emerging Infectious Disease Conference, Atlanta, in March. POC: LTC Stephen Craig, DSN 584-1054, 410-671-1054, or 1-800-222-9698.

OVERHYDRATION/HYPONATREMIA IN TRAINEES

The overhydration/hyponatremia Epidemiology Consultation to Fort Benning, GA, August 1997, documented an unrecognized and potentially life-threatening problem associated with excessive fluid intake/consumption during hot weather training. This survey has been coordinated with medical authorities at Fort Benning, physiologists at U.S. Army Research Institute of Environmental Medicine (USARIEM), and urology specialists at Madigan Army Medical Center. New fluid replacement guidelines have been developed and will be validated this summer at Fort Benning by USARIEM personnel. POC: LTC Stephen Craig, DSN 584-1054, 410-671-1054, or 1-800-222-9698.

TRAINING INJURIES AMONG BASIC TRAINEES/SOLDIERS

Epidemiological consultations to Forts Jackson and Benning have been conducted to examine the relationships between injuries, physical fitness, and demographic characteristics among the trainees at these installations. Similar studies are being conducted at Fort Drum, NY, and the Marine Officers Basic Course, Quantico, VA, where injuries and associated risk factors for injuries are being examined. Interventions to reduce injuries are being examined at Fort Benning. Closer examinations of associations between physical fitness and injuries are being conducted at Fort Jackson in conjunction with the Centers for Disease Control and USARIEM. All surveys are ongoing and data analysis is proceeding. POC: MAJ William Hewitson, 584-1329, 410-671-1329, or 1-800-222-9698.

Directorate of Health Promotion and Wellness

NATIONAL NUTRITION MONTH RESOURCE PACKET (NNMRP)

The USACHPPM will provide you, upon request, the 1998 NNMRP. In the spirit of partnership, and in an effort to more efficiently utilize the limited human resources of the Armed Services, the materials present the second Tri-Service NNMRP. The materials were reviewed and endorsed by the DOD Nutrition Committee and can be utilized year round, not just during March.

The packet consists of four parts: Marketing and Planning, Resources, Reproducible Handouts, and Articles for Publications. POC: LTC Sally Hoedebecke, DSN 584-7007, 410-612-7007, or 1-800-222-9698. ccmail: Hoedebecke, Sally LTC (if you are on cc-mail). Internet mail: LTC_Sally_Hoedebecke@chppm-ccmail.apgea.army.mil

PERFORMANCE POWER...THE NUTRITION CONNECTION

Performance Power...The Nutrition Connection (PPNC) is a tri-service educational package developed by the U.S. Army Research Institute for Environmental Medicine (USARIEM) and distributed throughout DOD by USACHPPM.

The objective of PPNC is to increase health and readiness by communicating performance nutrition information. Implementation of PPNC does not require a health care professional; it is meant to be used at the unit level by Training Officers and NCOs. The program is suitable for a variety of educational formats.

The PPNC program contains six modules. Each module consists of a video tape (10-15 minutes), an instructor manual, and a participant manual. The participant manuals are provided in camera-ready copies so that they can be reproduced locally in the amount required. See the chart below for module titles.

Materials for PPNC are free and are available through normal supply channels. See the chart for ordering instructions. POC: LTC Sally S. Hoedebecke, DSN 584-7007, 410-612-7007, or 1-800-222-9698.

MATERIAL REQUESTED	METHOD TO REQUEST	SPECIAL INSTRUCTIONS
Brochures Participant Manuals	1) US Army Publications Distribution Center - St Louis,MO Unit of Issue: Manuals 1-6 = 25 Brochures = 100 2) US Army Publishing Agency's electronic system a) STARPUBS DDN Interface (SDIS): asqzim@hoffman-emhl.army.mil b) World Wide Web (WWW): http://www-usappc.hoffman.army.mil c) USAPPC Bulletin Board System (BBS): DSN 221-6736/6737 or Commercial (703) 325-6736/6737	Request materials by **publication** number
Videos	1) Write: USAVIC ATTN: SAM-OPV-JT Bldg 3/Bay 3 11 Hap Arnold Blvd Tobyhanna, PA 18466-5102 2) Fax: DSN 795-6106 or Commercial (717) 895-6106	Request materials by **pin** number
Instructor Manuals	Phone: ARMY -- Hoedebecke, DSN 584-4656 or Commercial (410) 671-4656 NAVY - Mary Kay Solera, Commercial (757) 363-5585 AIR FORCE - MAJ Heffner, DSN 858-8070 or Commercial (301) 981-8070	None

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MODULE	TITLE	PUBLICATION NUMBER	PIN NUMBER
PP Module 1	"Getting Started"	Misc Pub 40-5	# 710856
PP Module 2	"Performance Diet"	Misc Pub 40-6	#710860
PP Module 3	"Performance Choices"	Misc Pub 40-7	# 710859
PP Module 4	"Fluids"	Misc Pub 40-8	# 710858
PP Module 5	"Nutritional Supplements"	Misc Pub 40-9	# 710861
PP Module 6	"High Caliber Field Nutrition"	Misc Pub 40-10	# 710857
Brochure	"Performance Nutrition for Weight Management"	Misc Pub 40-2	None
Brochure	"Performance Nutrition Myths and Facts"	Misc Pub 40-3	None
Brochure	"Food Shopping, Making Performances Choices"	Misc Pub 40-4	None

THE PROBLEM OF WEIGHT

It should come as no surprise that many Americans make losing weight one of their New Year's Resolutions. Americans are concerned about their weight. Concerns about weight begin early. By high school, one-third of the female and a fourth of the male students think they are overweight, and two out of five high school students are already dieting (CDC, 1998). Though the current rate of obesity in teenagers is one in five, the trend shows an increase in obesity among children, teenagers, and adults. When we get into the adult years, as many as one-third of Americans are overweight (U.S. Public Health Service, 1995).

Why all the concern about weight? Along with excess weight comes increased health risks, negative social consequences, and economic hardships. First, excess body fat is a major health risk. With increasing weight comes an increased danger of cardiovascular disease, diabetes, and damage to weight bearing joints, to name just a few. Perhaps as many as 300,000 Americans die each year as a result of being overweight ("Former Surgeon General," 1996).

There are significant social and economic consequences of being overweight. One study revealed that "overweight women had completed 3 fewer years of school, were 20 percent less likely to be married, had a household income of nearly $7,000 less per year, and had a 10 percent higher rate of household poverty than women who were not overweight" (Gortmaker, S L; Must, A; Perrin, J M; Sobol, A M; Dietz, W H; Schowalter, John E., MD, Commentator; Talbott, John A., 1995). The social and economic biases of obesity for men may be less

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severe. The same study only reported that overweight men were 11 percent less likely to be married.

For the Army, excess body fat leads to a significant loss in dollars and human resources. Last year 1,945 enlisted soldiers left the Army because of excess weight. The cost to train a Basic Infantry Soldier is about $20,000. Considering only this basic level of training (and not counting the cost of advanced schooling and the experience of more senior personnel), the Army lost $39 million last year alone!

What can be done about the problem of weight? It appears there may be a strong link between obesity and our genetic makeup. Our genes determine how our body treats food. One way this is done is through producing a substance called "leptin." When leptin reaches a receptor in the brain, a reaction occurs which signals, "I'm full." Weight challenged individuals may have up to 30 percent more leptin in the fluid surrounding their brain than "normal" weight individuals, but their receptor may be less sensitive to Leptin's presence and, therefore, slower in signaling to stop eating. If genes are the problem, some would argue, we need to focus more on "redefining body image and enhancing self-worth rather than targeting weight loss" ("Recovery From Obesity," 1997).

Whether being overweight was due to genes or over indulgence, there are those who have found they were able to lose weight. Preliminary results from the National Weight Control Registry (NWCR) suggest successful weight loss and maintenance strategies. Below are the strategies used by over 784 individuals in the registry who have lost at least 30 pounds and maintained that loss for an average of 5.5 years. Listed in the table below is the percentage of people in the NWCR who used a particular strategy to lose weight and what they did to keep the weight off (Tinker and Tucker's study as cited in "Recovery From Obesity," 1997).

Strategy	Weight Loss	Weight Maintenance
Eliminating certain classes of foods	87%	
Limiting certain classes of foods		92%
Limiting portion size	44%	49%
Counting calories	43%	50%
Counting fat grams*		30%
Physical activity	89%	70%**
Weighing yourself at least weekly		75%

*The average fat intake was 24% (its is recommended that less than 30% of your calories come from fat).

**This reflects the percentage of individuals who exceeded the activity level recommended by the American College of Sports Medicine. Please consult with your physician before beginning an exercise program.

For now there are no magic pills to cure obesity. Society continues to show a bias against those who are overweight, and there are significant health risks associated with obesity. However, there are strategies overweight people have successfully used to lose weight and to keep off those excess pounds. Most of these strategies are good advice for all of us, even those who do not fight the battle of the bulge. The key is to increase physical activity, keep fat calories below 30 percent of your total diet, watch portion sizes, and try to maintain moderation in all things. If you have already broken your New Year's Resolution to lose weight, do not despair. At least 25 percent have done the same within the first week of the new year. Instead, start from where you are now, pick a strategy for success, and revise your weight loss plan. Keep in mind that the best plans are flexible, doable, and of course allow for a little slip now and then. POC: MAJ Mark K. Davis, DSN 584-7011, 410-612-7011, or 1-800-222-9698.

MAKE NUTRITION COME ALIVE

IT'S ALL ABOUT YOU

National Nutrition Month is an annual event sponsored by the American Dietetic Association. The theme for March 1998 was Make Nutrition Come Alive. It's All About You. Good nutrition does not require great sacrifice or restriction, and all foods can be a part of healthy eating, if consumed in moderation. Good nutrition is a personal choice!

What better program supports this theme than *5 A Day*. It is difficult to imagine a plan so effective and powerful and yet so simple as the *5 A Day for Better Health Program*. All a person needs to do is to be certain to eat five or more servings of vegetables and fruits each day. This is such a simple, positive message that dietitians and health promotion coordinators have latched on to it because of its potential for keeping people healthy.

Health is influenced by three important personal decisions: smoking, alcohol and diet. Two out of three adults do not smoke or drink excessively. This makes what they eat the single most important decision influencing their long-term health. A Surgeon General's Report on Nutrition and Health concluded that two-thirds of all deaths involving coronary heart disease, stroke, atherosclerosis, diabetes and some types of cancer are related to what we eat. In fact, about 35 percent of all cancer deaths in America may be related to diet. It is alarming, but promising, to know there is a link between diet and the leading cause of death in America.

Our knowledge of how foods fight diseases is increasing. Foods contain the necessary nutrients which provide health benefits that are not found in vitamin/mineral pills. For example, citrus fruits contain ascorbic acid and other compounds believed to protect against malignancies. Members of the cabbage family contain compounds that are known to fight cancer. Many studies show that eating fruits and vegetables is better than taking a vitamin pill.

Adding more fruits and vegetables to your diet presents endless possibilities. Add a fruit for breakfast or a 100 percent vegetable or fruit juice to start your day. For lunch try a salad on the side. Have a vegetable or fruit snack during the day. Two vegetables at dinner can complete your *5 A Day* grouping.

Wouldn't you know such a simple, healthful program would be backed by the National Cancer Institute in the Health and Human Services and the Produce for Better Health Foundation? This is an unprecedented public/private partnership. Over 150 epidemiological studies of people who consumed the five servings of fruit and vegetables daily showed reduced risk of developing cancers of the digestive and respiratory tracts over those who consumed fewer than two servings a day. Serving sizes are actually smaller than you would think. One serving size is:

1 medium fruit or 1/2 cup of cut fruit
3/4 cup (6 oz) 100 percent vegetable or fruit juice
1/4 cup dried fruit (raisins, apples)
½ cup raw or cooked vegetables
1 cup leafy vegetables (lettuce, spinach)
½ cup cooked beans or peas (lentils, navy beans, kidney beans)

The rewards for following the *5 A Day* plan will be more vitamins and minerals to enrich your body. Diabetics will have soluble fiber to help even out their glucose level. Fiber will help everyone to have normal bowel habits. You can lose weight and lower cholesterol as you fill up on low calorie foods.

Vegetables and fruits are the perfect munchies. They are the original fast foods. You can grab them and run. You can eat them out of your lunch box. You can eat often *because they are low calorie*. Fruit and vegetables *5-A Day* will keep you healthy along your way. Isn't this plan easy? POC: LTC Sally Hoedebecke, DSN 584-7007, 410-612-7007, or 1-800-222-9698.

Directorate of Laboratory Sciences

NEW HIGH-VOLUME AIR SAMPLERS EVALUATED

Exposure to toxic materials in the air is a growing threat to deployed troops. While industrial chemicals pose the most common threat, the use of chemical and biological agents by terrorists, as well as weapons of war, is of increasing concern at the national and international level.

Early detection of such materials requires air sampling technologies that are portable, easy to operate, reliable, and of high sensitivity. Current technologies for high-volume air sampling for chemical substances, particulate matter, or biologicals are heavy, bulky, and pose reliability problems. A number of novel high-volume air sampling devices are now being developed under Federally-sponsored programs that use sampling technologies with devices that are much more field suitable.

This Directorate, under funding from the Office of the Surgeon General, recently completed an evaluation of four air sampling devices in advanced phases of commercial development. Seven scientists focused their efforts on evaluating properties required for collection of particulate and chemical materials. They proceeded on the hypothesis that a single type of air sampler could be used for collection of a wide range of particulates and chemical substances. Most high volume samplers to date have been designed for only one class of contaminant, like particulates or chemical materials, but not both.

The four candidate samplers were compared against the current military air sampler for biological agents, the XM-2.

The goals for the project were to:

- gain a working knowledge of these novel air samplers.
- carry out a limited operational evaluation of the samplers.
- measure the retention capability of the samplers for a selective list of test substances.

Five chemical warfare agent simulants and four particulate sizes, all respirable, were chosen and used to evaluate the samplers. Operator evaluations, both subjective and objective, were collected.

The results show that a single sampler type may be adaptable for collection of both chemicals and particulates (radioactive or biological). All samplers were able to retain test chemical simulants, although efficiency varied. Particles were well retained over the entire respirable range.

Results suggested that two of the samplers should be retained for further consideration. These devices are recommended because both are well-engineered, are most adaptable, and appear close to commercialization. Both are computer-controllable and one operates from a standard military battery.

This phase of the project is complete. The Directorate hopes to be involved in follow-on work to further evaluate the performance of the samplers in field situations. POC: Mr. Robert Valis, DSN 584-2208, 410-671-2208, or 1-800-222-9698.

Technician performs evaluation of one of the four air samplers.

HOW'S MY CHOLINESTERASE, DOC?

This may not be a question you frequently ask unless your job involves working around and/or handling chemical agents, specifically nerve agents. Cholinesterase (ChE) is a body chemical that plays a vital role in the proper action of muscles. It is the target of nerve agents, chemicals that bind with ChE rending exposed people unable to control their bodies.

The analysis of ChE is a key indicator of low level exposure and is the cornerstone of the medical surveillance program for nerve agent workers under the DOD Cholinesterase Monitoring Program (CMP). Blood samples from workers are collected periodically and analyzed by laboratory personnel at seven different sites in the continental U.S. and one overseas.

The Cholinesterase Reference Laboratory (CRL), Directorate of Laboratory Sciences, is located at USACHPPM-Main. Its mission is to ensure laboratory quality within the DOD CMP by providing standard methods, guidance, quality assurance oversight, comparative analysis, proficiency testing, on-site compliance inspections, and technical expertise to the eight satellite labs.

In 1970, the program began as an effort to monitor the proper use of safety equipment and procedures. In 1975, Fitzsimons Army Medical Center, Aurora, CO, was designated as the reference

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Technician inspects sample prior to cholinesterase testing.

laboratory for the program. In 1983, the focus changed to the current one of medical surveillance. In 1990, ownership was transferred to USACHPPM's Direct Support Activity-West; in May 1996 it moved to the current location at USACHPPM-Main.

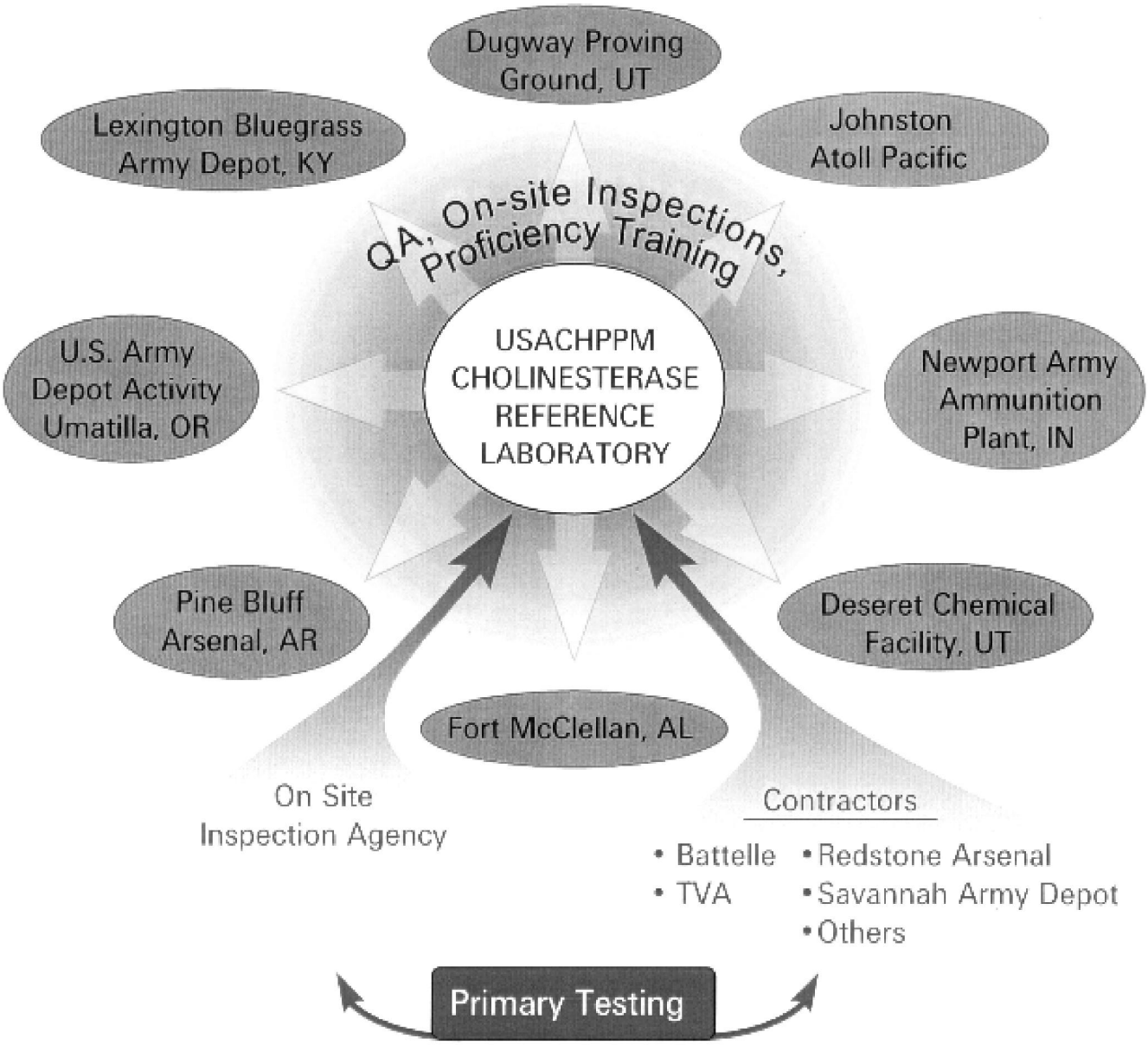
The chemical operations currently supported by the DOD CMP include the Stockpile, Non-stockpile and Chemical Demilitarization Programs; the On-Site Inspection Agency which assists the Organization for the Prohibition of Chemical Weapons under the Chemical Warfare Convention Treaty Inspections; and institutions of research, medicine, and education.

The analytical method used is Delta-pH. In the method, a venous blood sample is added to a test tube containing buffer and reagents and then incubated. By measuring a small change in pH over a short period of time, the activity of the ChE enzyme is determined. By closely monitoring people who are in high-risk jobs, even sub-clinical exposures may be detected. This test is also important in identifying people whose activity is so low that any exposure to a ChE-suppressing compound can be serious (some pesticides inhibit ChE activity). During the first quarter of FY98, the CRL performed over 4300 analyses.

The CRL operates under a quality system that ensures consistent, top-quality results. The laboratory maintains registration with the Armed Forces Institute of Pathology as a high complexity testing facility and is accredited by the Commission of Office Laboratory Accreditation. A third-party auditor recently commended the laboratory stating that the quality system in place greatly exceeded that of any other clinical laboratory he had inspected.

Chemical agent workers may have more to be concerned about than the average worker, but thanks to the CRL they don't have to worry about the accuracy of their ChE test results! POC: MAJ James Carr, DSN 584-8298, 410-671-8298, or 1-800-222-9698.

DoD RBC ChE


Dugway Proving Ground, UT
Lexington Bluegrass Army Depot, KY
Johnston Atoll Pacific
QA; On-site Inspections, Proficiency Training
USACHPPM CHOLINESTERASE REFERENCE LABORATORY
U.S. Army Depot Activity Umatilla, OR
Newport Army Ammunition Plant, IN
Pine Bluff Arsenal, AR
Deseret Chemical Facility, UT
Fort McClellan, AL
On Site Inspection Agency
Contractors
• Battelle
• TVA
• Redstone Arsenal
• Savannah Army Depot
• Others
Primary Testing

USACHPPM SCIENTISTS PLAY IMPORTANT ROLE IN DEVELOPING NEW RADIATION MANUAL

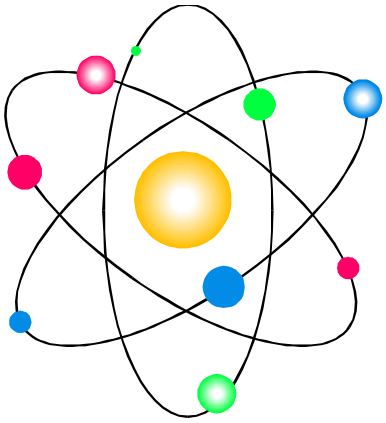
For over a year, Mr. Ronald J. Swatski, Chief, Radiologic, Classic, and Clinical Chemistry Division, has been a key member of a multi-agency group charged with developing the Multi-Agency Radiation Laboratory Analytical Protocols Manual, or MARLAP as it is known. The MARLAP is intended to provide guidance for all operations that impact laboratory analysis of radionuclides. The manual promotes high quality radioanalytical work and provides a framework for national consistency and coordination in the laboratory analysis of radionuclides. A second member, 1LT Andrew Scott, Medical Health Physics Program, has recently been added to the effort.

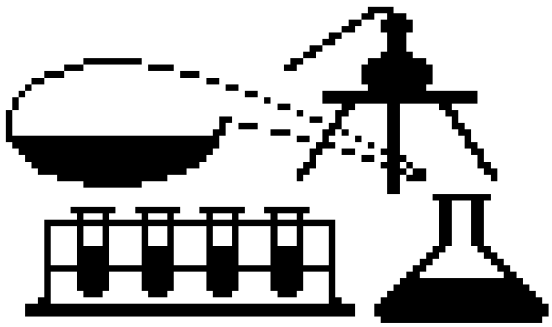
The agencies contributing to MARLAP are the U.S. Environmental Protection Agency; Department of Energy; Nuclear Regulatory Agency; DOD; Department of Commerce; Department of the Interior; and Food and Drug Administration. Several states are also sending representatives to provide input to this landmark initiative.

The MARLAP is intended to meet the growing need for high quality data to support remediation decision rules at contaminated sites. In this regard it fills a void; no written, accepted guidance exists. The MARLAP compliments the Multi-Agency Survey and Site Investigation Manual (MARSSIM), which addresses decommissioning, but it is also generally applicable to a wide range of radioanalytical problems beyond those typically addressed in support of site remediation and decommissioning.

The MARLAP is divided into two sections, one for the program manager and one for the radiochemist, that are linked. The document is still being organized to better provide guidance to its customers. The topics include project planning and contracting services, field sample preparation and preservation, sample tracking, sample homogenization, sample dissolution, methods, and nuclear counting instrumentation. A section on data assessment is being considered and will encompass verification and validation, as well as data quality assessment.

The MARLAP is currently in draft stages and not yet available for distribution. The tentative schedule calls for a draft to be available for interagency review by the end of 1998 or early 1999. POC: Mr. Ronald J. Swatski, DSN 584-3983, 410-671-3983, or 1-800-222-9698.





Directorate of Occupational Health Sciences

THE U.S. ARMY BIOASSAY PROGRAM FOR INTERNALLY DEPOSITED RADIONUCLIDES

What is a Radiological Bioassay?

Radiological bioassay is defined as the determination of the kind, quantity, or concentration, and location of radioactive material in the human body by direct measurement or analysis of materials excreted or removed from the body. Bioassay programs are designed to identify potential health problems that may arise to individual workers, evaluate the effectiveness of radiation protection programs, and assure compliance with regulations. Direct bioassay (in-vivo) includes whole body counting or organ counting, and indirect bioassay (in-vitro) includes urinalysis, fecal analysis, or other. Conditions that require monitoring for internal exposure are dictated by the Code of Federal Regulations (CFR).

Each Nuclear Regulatory Commission (NRC) license shall monitor the occupational intake of radioactive material by and assess the committed effective dose equivalent to:

a. Adults likely to receive, in 1 year, an intake in excess of 10 percent of the applicable Annual Limit of Intake (ALI).

b. Minors and declared pregnant women likely to receive, in 1 year, a committed effective dose equivalent in excess of 0.05 rem (0.5 mSv)(10CFR20.1502).

For purposes of assessing dose used to determine compliance with occupational dose equivalent limits, the license shall take suitable and timely measurements of:

a. Concentration of radioactive materials in air in work areas; or

b. Quantities of radionuclides in the body; or

c. Quantities of radionuclides excreted from the body; or

d. Combinations of these measurements (10CFR20.1204).

What is USACHPPM's role in a Bioassay?

The USACHPPM is responsible for providing bioassay support, upon request, to Department of the Army (DA) and Defense Logistics Agency (DLA) installations in support of the NRC license conditions of DA and DLA. Specifically, USACHPPM is directed to perform bioassay analyses that result in individual internal dose data compatible to the DA-approved dose analysis method(s). Specimens for bioassay are collected at medical treatment facilities (MTFs) by occupational health professionals and sent to USACHPPM for analysis and dose assessments. Specimens are prepared and analyzed based on the particular radionuclide(s) suspected of internal intake. The basic types of requests received for bioassay services are the routine and incident (priority - emergency). The Radiologic, Classic, and Clinical Chemistry Division (RCCCD) employs specialized radioanalytic techniques and instrumentation to quantify the radionuclide concentration in the specimen. Dose assessment is then performed by the Medical Health Physics Program (MHPP) on the analytical data generated by the laboratory.

A dose assessment report is produced concerning the routine or incident request, and subsequently sent to the MTF which initiated the request and submitted the specimen, the NRC license manager, and the U.S. Army Ionizing Radiation Dosimetry Center (USAIRDC). The report sent to the MTF is placed into the individual's medical record. The report sent to the NRC license manager is archived. The report sent to the USAIRDC is combined with any external dose in order to provide the NRC annual dose history. The USAIRDC archives the report for at least 75 years. The Occupational and Environmental Medicine Program (OEMP) provides medical advice to the MHPP upon request, and

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counseling to health care professionals and patients concerning medical aspects of an internal intake of radioactive material. The USACHPPM processes approximately 1,400 bioassay requests annually. Approximately 10 percent of all requests involve incidents usually requiring NRC notification. Less than 1 percent of all specimens processed exceed a dose of 10 mrem. To illustrate the process of the U.S. Army Bioassay Program two case studies are presented below.

What are the Regulations concerning Bioassay?

Army Regulation 40-14 (Occupational Ionizing Radiation Personnel Dosimetry) states that under the command jurisdiction of the U.S. Army Medical Command (MEDCOM), the Commander, USACHPPM will:

a. Provide bioassay support, upon request, to DA and DLA installations and activities in support of license conditions of DA and DLA NRC licenses.

b. Produce bioassay analyses that result in individual internal dose data compatible to the DA-approved dose analysis method(s).

AR 40-14 also states that USACHPPM will transmit internal dose data to the USAIRDC, the NRC license manager, and the installation or activity requesting bioassay support. This is accomplished by coordination between three programs: RCCCD, MHPP, and OEMP.

Who should be concerned?

The U.S. Army has several NRC licenses that are managed by different Army activities (U.S. Army Materiel Command; U.S. Army Communications-Electronics Command; Armament, Chemical, Acquisitions, Logistics Activity; and the MEDC0M. All of these activities, except MEDCOM, hold radioactive material commodity licenses. Army MTFs possess site specific NRC licenses for human use. Broken commodities which contain radioactive material contribute to most of the accidental exposures involving an intake to soldiers and civilians. Tritium (H-3) is the most common radionuclide that has the greatest potential for accidental external exposure and internal intake. The U.S. Army has a total possession limit for H-3 of 950,000 Curies (Ci), for illumination devices with source strengths ranging from 0.75 to 10 Ci each, on fire control devices for howitzers, mortars, and tanks. Commodities that are licensed to one activity may be used by soldiers in other activities. This can present a problem with notifying the appropriate organization.

There are several hundred to a thousand Army commodities that contain radioactive material. A short list of some of the common radioactive commodities that are responsible for accidental internal intakes of radioactive material is shown in Table 1. Figure 1 depicts an M1A1 collimator, which contains 10 Ci of H-3. Accidental intakes involving radionuclides usually occur as a result of maintenance on equipment, unauthorized maintenance by inexperienced individuals, or disregard to the local/NRC license radiation protection program. As a result, two types of bioassay requests are made: priority/emergency requests for incidents; and routine requests. The components of the U.S. Army Bioassay Program are shown in Figure 2. Figures 3, 4, and 5 show other Army equipment containing radiological material.

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Table 1. Common Army Radioactive Commodities Responsible for Internal Intakes.

Radionuclide	Amount of Radioactive Material	Army Commodity
Tritium (H-3) Beta decay (β)	7.0 $x10^{10}$ Bq (1.9 Ci)	Fire control quadrant
	3.7 $x10^{11}$ Bq (10 Ci)	M1A1 collimator
	3.1 $x10^{11}$ Bq (9 Ci)	81 mm mortar sight
	9.1 $x10^{11}$ Bq (25 Ci)	Tritium exit signs
Am-241 Alpha decay (α)	9.4 $x10^{6}$ Bq (0.25 mCi)	Chemical detector
Pm-147 Beta decay (β)	1.1 $x10^{6}$ Bq (0.03 mCi)	surge arrestor, clock
Depleted uranium Alpha decay (α)	7.3 $x10^{7}$ Bq (2 mCi)	120 mm cartridge
Th-232 Alpha decay (α)	0.20-0.30 Bq (5-8 pCi)	boresight, lens, prism
Co-60 Gamma decay (γ)	4.3 $x10^{4}$ Bq (1.2 uCi)	wave tube
*Ra-226 Alpha decay (α)	5 to 9 $x10^{6}$ Bq (0.1 to 0.25 mCi)	compass, watch, clock

Not a complete list of Army radioactive commodities.
***Most of the Army Commodities containing Ra-226 are obsolete, but they are still encountered, i.e. museum equipment pieces, storage of obsolete equipment in warehouses. (Technical Bulletin 43-0116)**

Summary of Events involving Am-241 Intake

In April 1997, three individuals were suspected of being exposed to Americium-241 (Am-241) in a powder form originating from a M43A1 chemical agent detector (Figure 3). The installation radiation protection officer (RPO) instructed the individuals to report to the occupational health clinic for the purpose of obtaining a fecal specimen for bioassay. Fecal specimens were collected, over a period of four days (according to USACHPPM Technical Guide 211) and submitted to the laboratory for the analysis and the assessment of intake. Alpha spectroscopy was performed on the specimens. U.S. Air Force Armstrong Laboratory provided analytical support for this investigation. Only one of the individuals appeared to have incurred an intake. The intake was extremely small, on the order of 0.08 percent of the annual ALI for radiation workers or 0.82 percent of the limit for members of the general public.

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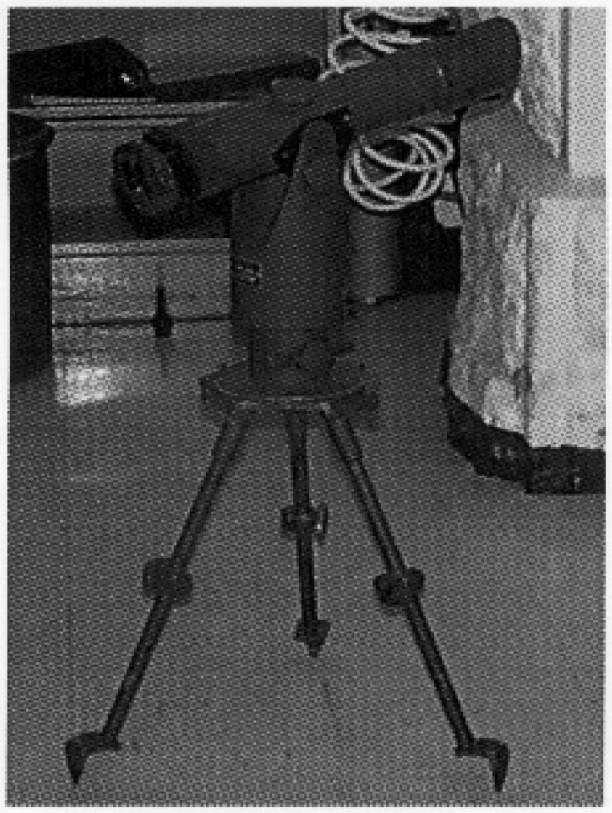
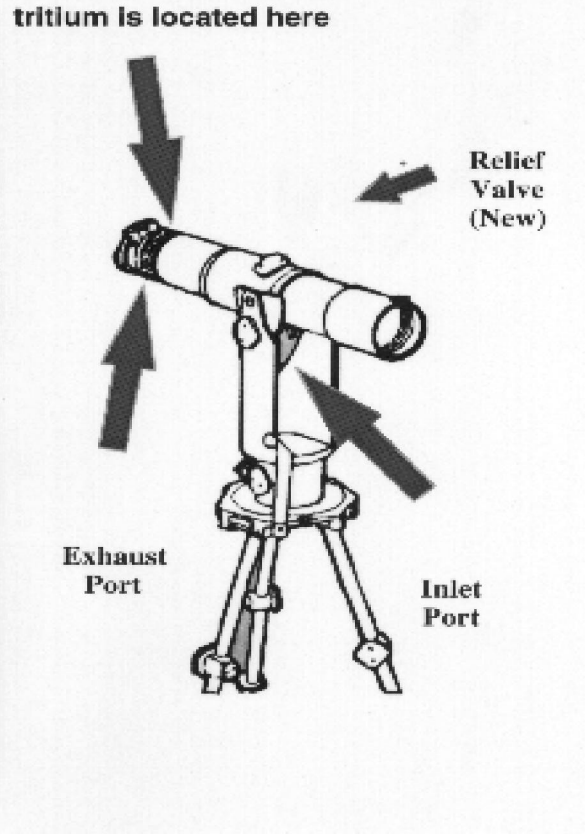
Figure 1. M1A1 Infinity Collimator.
Contains 10 Ci of Tritium.





Summary of Events involving H-3 Intake

Three individuals (Army reservists) were handling M-17 fire control quadrants during the period of November 1996 to March 1997. In early March 1997, a fire control quadrant was found to be nonilluminating. It was suspected that an internal exposure involving an intake of H-3 may have occurred during the time period in which these individuals were in the proximity of the fire control quadrants. Upon further investigation by the installation RPO, it was postulated that the most probable date in which the incident occurred was mid November 1996. Urine bioassay samples were collected and sent to a local university for analysis. The results reported by the university indicated a significant exposure in one of the individuals. The NRC license manager along with the NRC were notified of a possible internal exposure, and questioned the results and conclusions. The urine specimens should have been submitted to USACHPPM for analysis and assessment of the intake. The USACHPPM MHPP questioned the method by which the university performed the dose assessment and found that an incorrect equation was used to calculate the final dose. The MHPP assessment of the dose was significantly lower than previously reported. Confirmation concerning the parameter used by MHPP to generate a dose assessment was received from a leading bioassay expert at Oak Ridge National Laboratory. Only one of the individuals appeared to have incurred an intake of H-3. The intake was minimal, on the order of 3 percent of the ALI for radiation workers. POC: Mr. John Collins, DSN 584-3548, 410-671-3548, or 1-800-222-9698.

Figure 2. Components of the U. S. Army Bioassay Program

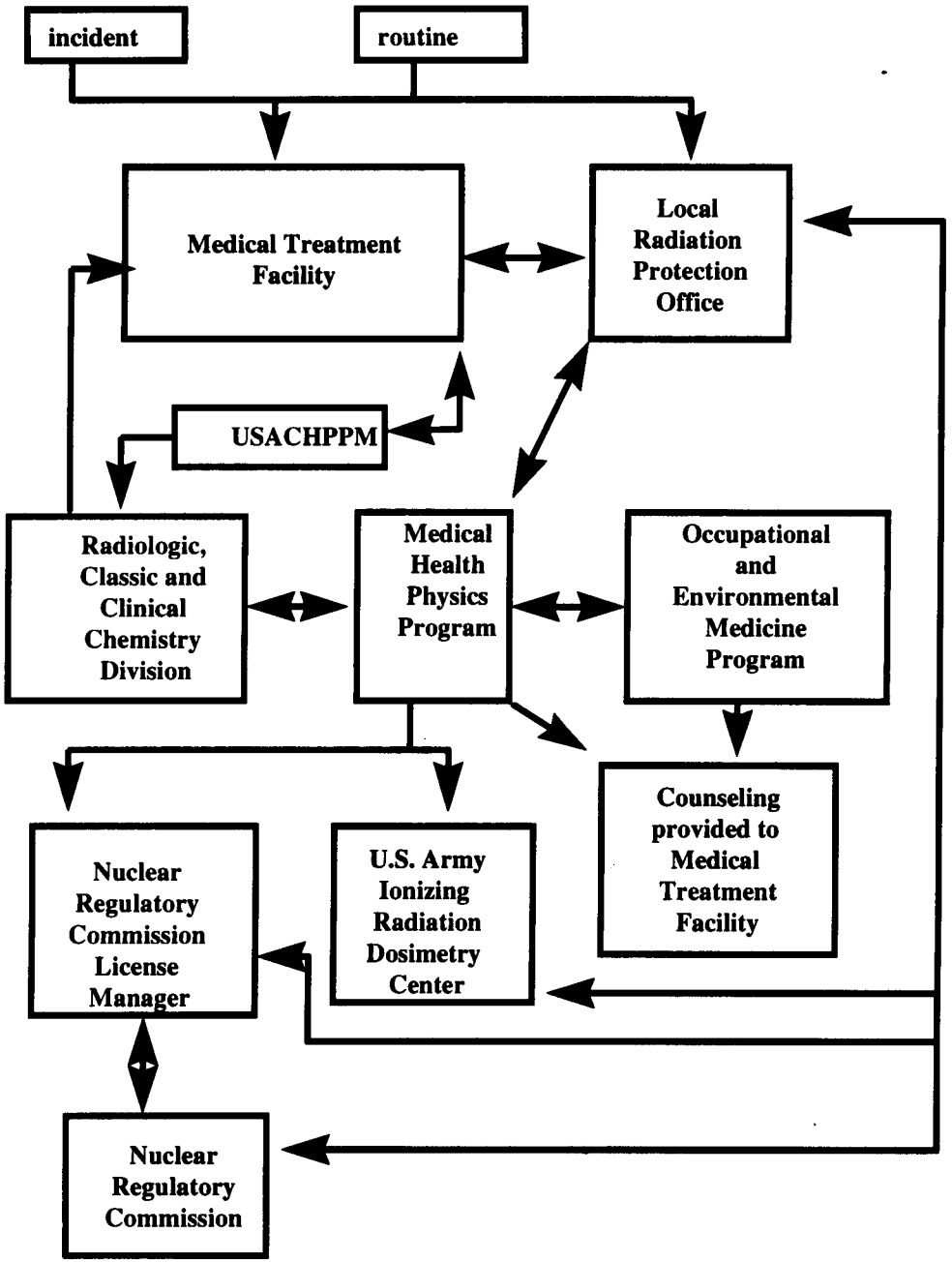


Figure 3. M43A1 Chemical Agent Detector. Contains Americium-241.

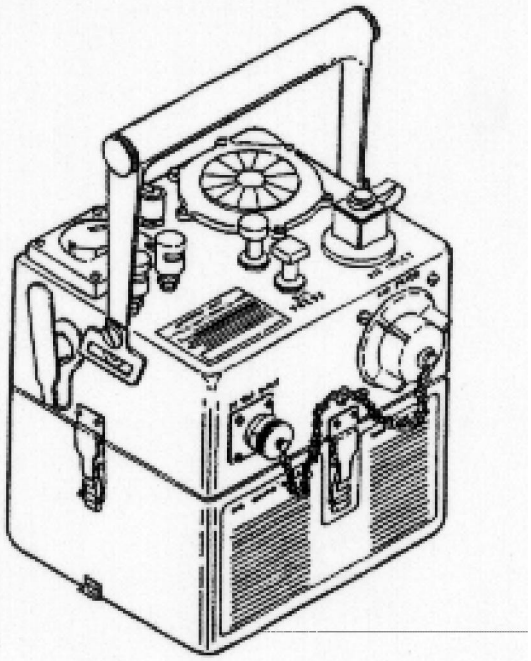


Figure 4. Armor-piercing rounds with DU tank Penetrators. (NOTE: Not all of the rounds shown below contain DU)

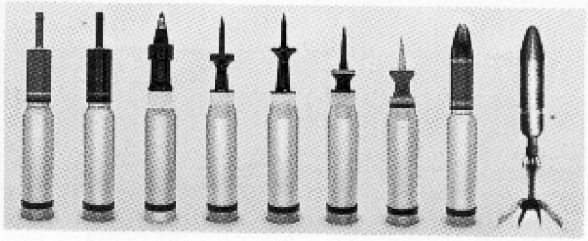


Figure 5. M1 Tanks are able to use armor made of DU in addition to being able to fire rounds containing DU.

NATIONAL STANDARD FOR THE USE OF LASERS OUTDOORS

Mr. Wesley J. Marshall, Laser/Optical Radiation Program, is chairman of the American National Standards Institute Subgroup on Analysis and Application. The Subgroup recently met in Melbourne, FL, to complete the Appendix material for a new American National Standard which the committee has been working on for the last three years.

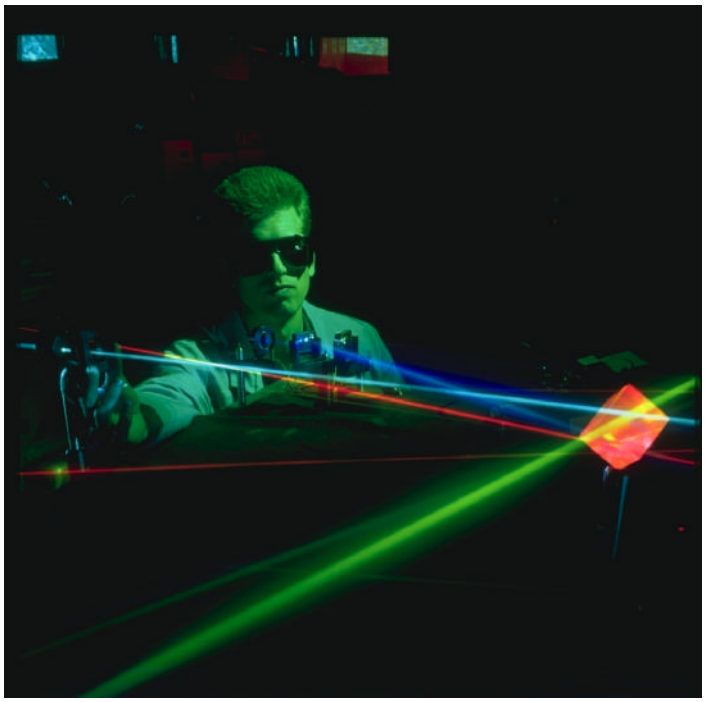
It will be a National Standard for the Use of Lasers Outdoors and will cover military use, police use, outdoor laser training lasers, outdoor laser light shows, and scientific uses of lasers outdoors. Concerns include exposure to airline pilots, skydivers, balloonists, satellites, helicopters, personnel in buildings looking out, etc.

Committee members include representatives from the National Aeronautics and Space Administration, all branches of DOD, Food and Drug Administration, Federal Aviation Administration, scientists, airline pilots and instructors, and the laser light show industry (including the International Laser Display Association, and Disney World). POC: Mr. Wesley J. Marshall, DSN 584-3932, 410-671-3932, or 1-800-222-9698.

EVALUATING OPTICAL HAZARDS FROM LASER TRAINING SYSTEMS

Dr. David H. Sliney, Program Manager, and Mr. Wesley J. Marshall, Laser/Optical Radiation Program, recently met with officials at the Simulation, Training and Instrumentation Command (STRICOM), Orlando, FL, to determine the direction of future work in USACHPPM's support in evaluating the optical hazards from the multitude of laser training systems developed by STRICOM and used to train military soldiers.

Emphasis will be placed on upcoming revisions of national and international standards which directly affect the analysis of low power galium-arsenide lasers which are used in practically all these training systems. Some of the revisions will take into effect retinal heat flow from noncircular retinal images, and the effect of eye movement during an unintentional exposure from one of these systems. POC: Mr. Wesley J. Marshall, DSN 584-3932, 410-671-3932, or 1-800-222-9698.



Evaluating laser protective materials.

WHAT DO WE DO IN MEDICAL SAFETY AND HEALTH?

The Medical Safety and Health Program assists safety and facility managers in developing, implementing, and evaluating programs to meet Joint Commission on Accreditation of Healthcare Organizations (JCAHO), Occupational Safety and Health Administration (OSHA), and National Fire Protection Association (NFPA) standards by performing on-site assistance visits, desktop consultations, and training programs. Safety and facility managers are assisted in meeting Centers for Disease Control (CDC) guidelines, U.S. Army Corps of Engineers (USACE), and Health Facilities Planning Agency (HFPA) design criteria, and consensus standards by performing on-site ventilation consultations and design reviews of Army medical treatment facilities (MTFs). Program personnel maintain close working relationships with OSHA, JCAHO, HFPA, NFPA, and USACE and serve on several technical committees to ensure customers receive accurate and up-to-date information.

The following is a summary of types of services provided:

The JCAHO Environment of Care Assistance Visit consists of an on-site visit 8 to 12 months prior to an Army MEDDAC/MEDCEN's scheduled JCAHO accreditation survey. This service prepares the medical facility for a JCAHO accreditation visit by evaluating seven required disciplines under the environment of care standard. These include safety, life safety, security, emergency preparedness, hazardous waste, equipment, and utilities. Recommendations are made on developing and improving management programs to meet the JCAHO environment of care standards. This survey results in a report which is usually generated on-site in the form of exit briefing notes and identifies areas where assistance was provided and gives recommendations for improvement.

Some of the most successful of these were Fort Sill, OK, recently receiving a score of 97 during the accreditation survey; a score of 100 would be a perfect score. In 1996, Fort McClellan, AL, scored 99; Fort Carson, CO, 96. In 1995, Tripler Army Medical Center, HI, scored 99; Fort Benning, GA, and Fort Wainwright, AK, followed closely with scores of 98; Fort Polk, LA, 97; and Fort Riley, KS, 96.

The JCAHO Statement of Conditions (SOC) Visit consists of an on-site visit at least 6 months prior to an Army MEDDAC/MEDCEN's scheduled JCAHO accreditation survey. During this service, the hospital's SOC is completed which describes the life safety features of the physical plant. The SOC consists of four parts: introduction and instructions; basic building information; the life safety assessment; and the plan for improvement. The SOCs require a thorough understanding of, and the ability to apply, the NFPA Life Safety Code 101® to numerous and unique conditions found in Army medical facilities. A SOC packet which consists of computerized forms and an updated/completed SOC is generated on-site

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and turned over to the hospital facility manager. The SOC is presented to the JCAHO surveyor as part of the facility's accreditation process.

Many pre-JCAHO surveys also will include the preparation of the SOC for the facility, or updating existing SOCs. Last year, SOCs were prepared for many Army facilities, as well as Shaw Air Force Base, SC, and the NAS, Corpus Christi, TX.

Safety managers have varied backgrounds, and many times a facility will hire someone with very little knowledge about medical safety. A new safety manager orientation consists of an on-site visit when a hospital hires a new safety manager. First-hand knowledge and expertise on the JCAHO standards, OSHA standards, Army safety regulations (to include MEDCOM regulations), and NFPA codes are provided. An on-the-job-training walk-thru of the facility with the safety manager to identify
typical safety and health deficiencies is conducted.

The most recent orientation was provided at Fort Rucker, AL, with a pre-JCAHO consultation.

Design review/ventilation evaluations

Design reviews are performed on Army MTFs at the request of the MEDDAC, USACE, HFPA, or architect and engineering firms. The design review includes an evaluation of the life safety features of the new facility and their compliance with NFPA and JCAHO as well as the ventilation and control systems for the facility, and compliance with the America Society of Heating, Refrigerating, and Air Conditioning Engineers, CDC, OSHA, and other design criteria. The design review process is a cost-effective way to ensure that the facility meets all applicable criteria before it is actually constructed, saving tens of thousands of dollars per year. Working with the HFPA and USACE ensures the design guidance is accurate and up-to-date. Design reviews can also be performed at the request of the facility manager for smaller additions and renovations to the hospital including life safety and heating, ventilating, and air conditioning (HVAC) upgrades. A significant design review project last year was the new Womack Army Community Hospital at Fort Bragg, NC (at the request of HFPA). This design review was used by HFPA to originate change orders and ensure that the facility was built to meet all applicable ventilation criteria.

Ventilation consultations are performed at Army MTFs at the request of the facility manager and/or the industrial hygienist. The ventilation consultation involves examining critical care areas of the hospital. This includes taking ventilation measurements and investigating the HVAC system, including controls. Measurements are compared with design values and the blueprints, and the cause(s) for any discrepancy or problems found are investigated. Commonly, ventilation problems develop in critical areas including operating suites and isolation rooms. The most recent ventilation consultations were performed at Fort Carson, CO, and Fort Stewart, GA.

Training and education is provided in the areas of bloodborne pathogens, safety in healthcare, antineoplastic drugs, hazard communication, and chemical hygiene. Training sessions are tailored to meet customer specifications and provide less materials so that students can ultimately train others. On occasion this service is provided outside MEDCOM to other segments of DOD. POC: Ms. Benita B. Bearce, DSN 584-3040, 410-671-3040, or 1-800-222-9698.

ERGONOMICS STANDARD

Representatives of the Ergonomics Program recently attended a meeting on the ergonomics standard. Occupational Safety and Health Administration (OSHA)/Bureau of Labor Statistics data indicate that most work-related musculoskeletal disorders injuries/illnesses are related to repetition and overexertion. They propose targeting high risk industries/activities - in particular manufacturing industry, manual materials handling, and intensive keyboarding over 4 hours per day or 20 hours per week.

The OSHA is proposing a performance-based standard which would be flexible/tailored to the particular type of industry, the size of the business, and the size of the problem. They would be looking for the critical program elements in their inspections (management commitment, worker involvement, workplace assessment, hazard prevention and control, education and training, medical management, and program assessment).

Elements of an effective program were discussed. Some participants raised the question of including medical management; the importance of medical management in early identification, as well as return-to-work programs, was expressed.

The issue of administrative paperwork burden was expressed as well as the need for training and information dissemination through the Internet and professional organizations. These issues will be reflected in the flexible standard OSHA envisions.

The general consensus was that there needs to be a standard. The DOD is the only Federal agency with a specific and directive ergonomics policy. The DOD views ergonomics as a health and safety issue and the individual services have initiated comprehensive program implementation plans. The DOD innovations and successes were brought up at the meeting as examples of effective, large-scale implementation of ergonomics programs. Additional information will be forthcoming. POC: LTC Mary Lopez, DSN 584-5493, 410-671-5493, or 1-800-222-9698

A worker struggles to use a 70 lb wrench ("Big Bertha") on a dredging ship. Proponants want an ergonomics standard to reduce such physically taxing jobs.

Directorate of Toxicology

RUSSIAN CHEMICAL WEAPONS DESTRUCTION

Members of the Directorate of Toxicology participated in a joint Toxicology Workshop with Russian counterparts in Moscow. Participants included LTC David Young, Director of Toxicology; Dr. Glenn Leach, a toxicologist and Program Manager for the Health Effects Research Program (HERP); and Dr. Michael Major, a chemist with HERP. Russian Federation attendees included scientists from two laboratories and representatives from the Ministry of Defense and Ministry of Health. The workshop reviewed proposed chronic toxicological studies associated with the Cooperative Threat Reduction Russian Chemical Weapons Destruction Support Program. The joint discussions are part of a multibillion dollar appropriation by the U.S. Government to bilaterally reduce the threat of chemical weapons through destruction of agents. The chronic toxicology studies are essential for developing an acceptable plan for the safe disposal of residuals resulting from the demilitarization process. Further collaborative meetings and discussions are planned. POC: LTC David Young, DSN 584-7388, 410-671-7388, or 1-800-222-9698.

INTERNATIONAL ASSISTANCE MISSION TO UKRAINE

An Environmental and Occupational Health Assessment Team recently visited Ukraine to conduct an assessment of military environmental and occupational issues. This team was one of several teams from various U.S. Army and DOD medical commands providing support to former Soviet block countries. These teams primarily provide guidance in areas of infectious disease control, preventive medicine, and occupational and environmental health. This team approach demonstrates the cooperation of the different U.S. Army and DOD medical agencies to work together and best address global issues.

Ukraine, once the home of the Soviet Union's largest nuclear arsenal and 800,000 of its front-line troops, is now a bridge between the East and West. The dissolution of the Soviet Union in December 1991 brought an end to the Cold War and created the opportunity to build bilateral relations with the New Independent States as they began a political and economic transformation. On December 25, 1991, the U.S. officially recognized the independence of Ukraine. It upgraded its consulate in the capital, Kiev, to embassy status on January 21, 1992.

The U.S. has consistently encouraged Ukraine's transition to a free, democratic society with a prosperous market economy. The U.S. and Ukraine have signed a series of bilateral agreements designed to enhance economic, technical, environmental, and cultural cooperation. During the visit of former Ukrainian President Leonid Kravchuk to Washington in 1994, he and President Clinton reached agreement on an expanded economic assistance package that provides up to $700 million to Ukraine; $350 million in technical and humanitarian assistance in FY 1994 funds; and $350 million in Nunn-Lugar funds (FY 1992-95 funds) to assist with nuclear dismantlement, non-proliferation programs, and industrial partnerships. Since 1994, Ukraine has become one of the largest recipients in the world of U.S. assistance.

The population is about 52 million, representing 18 percent of the population of the former Soviet Union.

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Ukrainians comprise about 73 percent of the total; ethnic Russians number about 20 percent. Ukrainian and Russian are the principal languages, but about 88 percent of the population consider Ukrainian their native language.

The USACHPPM team included LTC G. David Young, VC, Team leader; LTC Paul Smith, MC; MAJ Theresa Cutler, MS; Mr. John Bauer; Mr. Kenneth Williams; and LT Gregory R. Kahles, (U.S. Navy), Armed Forces Radiobiology Research Institute. The visit was coordinated and directed by COL Ernest T. Takafuji, former Commander, Walter Reed Army Institute of Research.

The emphasis of the trip centered on issues which were of greatest concern to the health authorities of the Ukrainian military: occupational health and safety associated with heptyl rocket fuel exposures; carcinogens and other chemicals or environmental exposures in the military workplace environment; and low-level radiation exposure associated with specific military assignments, as well as their ability to supply adequate medical care to exposed Ukrainian troops.

Additional work is scheduled for the Assessment Team to help determine the significance of occupational exposure and to assess medical consequences. They will also review some suggested areas of cooperation proposed by the Ukraine military leaders in dealing with health and occupational issues, primarily among the Ukraine soldiers. POC: LTC G. David Young, DSN 584-7388, 410-671-7388, OR 1-800-222-9698.

Photo by: LTC G. David Young

MAJ Theresa Cutler, an industrial hygienist, stands beside a utility vehicle in Kiev. Symbols painted on the side depict personal protective and safety equipment to be used by workers.

Photo by: LTC G. David Young

Members of the assessment team in front of the "peace tanks" on display in a square in Kiev. COL Barkevich (shown in middle), Ukraine military, served as escort.

Deputy Chief of Staff For Operations (DCSOPS)

STAFF ASSISTANCE TRAINING PROGRAM

The assistance program is USACHPPM's latest combined training initiative. It is designed to promote team building and soldier leader development. The goal of the program is to enhance Modification Table of Organization and Equipment preventive medicine (PM) assets abilities in support of operational deployments. The program will provide personnel in field units with hands-on training of items that require limited technical expertise to obtain optimal results in a field environment. The training focuses primarily on epidemiology, entomology, field food service, industrial hygiene, water quality analysis sets, global positioning system, and geographic information system. Units that receive this training will be able to maintain individuals that are highly trained to perform specialized surveys and analysis during deployments. This program will also train units to detect and respond to nuclear, biological, and chemical agents.

This training will give soldiers and commanders of local PM units the skills necessary to determine and convey health risk information to the supported commander and make sound recommendations in regards to the potential impact on the commander's mission.

The program will target 91Ss, Environmental Science Officers and Entomologists assigned to PM units. POC: CPT Eugene Thurman, DSN 584-2488, 410-671-2488, or 1-800-222-9698.

Professional Development

Training

TRAINING COURSES OFFERED BY USACHPPM		
Dates	Title	Location
20-24 April	Laser Radiofrequency Hazards	Comfort Inn, Edgewood, MD
27-30 April	Evaluating Auditory Readiness Tri-Service Application	Comfort Inn, Edgewood, MD
4-8 May	Evaluating Auditory Readiness	Comfort Inn, Edgewood, MD
11-14 May	Evaluating Auditory Readiness	Comfort Inn, Edgewood, MD
18-21 May	Evaluating Auditory Readiness	Comfort Inn, Edgewood, MD
12-14 May	Basic Health & Environmental Risk Communication	Washington, D.C.
11-15 May	Cooper Course	Sheraton, Towson, MD
23-25 June	Basic Health & Environmental Risk Communication	Las Vegas, NV
9-12 June	Basic Waste Management	Denver, CO
6-31 July	Tropical Medicine	Uniformed Services School
13-17 July	Management Concepts and Exposure Assessment Strategy (Tentative)	Comfort Inn, Edgewood, MD
13-17 July	Transportation of BioMedical Materials	San Antonio, TX
10-13 August	Advanced Health & Environmental Risk Communication	Las Vegas, NV

The course registration process requires an application form. Please FAX DSN 584-8197 or commercial (410) 671-8197 and request an application for the specific course/courses you're interested in. If you have any questions concerning course descriptions or prerequisites, please contact Doris Knapp at DSN 584-8139 or commercial (410) 671-8139 or FAX your request to the above number.

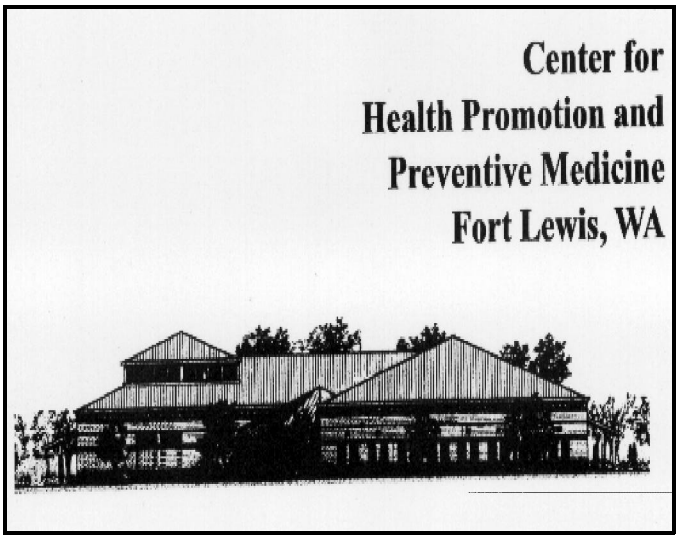
Note: Dates and locations are subject to change. Look for any updates on the worldwide web at http://chppm-www.apgea.army.mil/trng

Direct Support Activity (DSA) - West

U.S. ARMY GARRISON, FITZSIMONS, AURORA, CO

RELOCATION TO FORT LEWIS, WASHINGTON

DSA-West will relocate to Fort Lewis, WA, from U.S. Army Garrison Fitzsimons (USAG-F) during the January - March 1999 timeframe. This is part of a discretionary Base Realignment and Closure (BRAC) move due to the closure of Fitzsimons. A new facility is being constructed at the intersection of 5th and Blaine by the Seattle District - Corps of Engineers (COE) and Wade Perrow Construction at a cost of $3,366,336. DSA-West has a total of 32 military and civilian authorizations (14 officers, 4 enlisted, 14 civilians) that will transfer to Fort Lewis.



An Artist's Concept

The Military Construction (MILCON) project to construct the new DSA-West at Fort Lewis was awarded on 30 January 1998 to Wade Perrow Construction Company of Gig Harbor, WA. This project is a design-build project, which means the final building design and construction will be performed by the same firm, resulting in a significant time savings to the Army. The formal notice to proceed for this project was issued on 11 February 1998 by the Seattle District - COE. The actual size of the facility will be 18,717 gross square feet. The overall cost of the project is currently 121 percent of the Government programmed amount - primarily because of an authorized but unprogrammed addition of 3,500 square feet to the facility. The total time to design and build the facility is 330 days; end of construction is estimated to be 23 January 1999. Beneficial occupancy (when all laboratory and administrative furniture and relocated equipment is installed) by DSA-West is scheduled to be 1 March 1999.

USAG-F is currently scheduled to cease as an active Army installation and go to caretaker operations on 10 July 1999. Because of a drastic reduction in both military and civilian authorizations at USAG-F, particularly in the April/May 1999 timeframe, DSA-West's movement to Fort Lewis is critical to the timely closure of Fitzsimons. The present schedule allows for the DSA-West personnel and equipment movement in the late January - early February 1999 timeframe and should be completed prior to the last Fitzsimons reduction-in-force.

A small advance party of three - six personnel will relocate to Fort Lewis in the November - December 1998 timeframe to coordinate final details of installation support and help orchestrate the transition. Office space for this advance party is currently planned at Ramp 3 of Old Madigan Army Medical Center (MAMC); coordination with MAMC Facilities Management has occurred for occupancy of this space.

DSA-West has coordinated with the Fort Lewis Resource Management office for preparation of an Intra-Service Support Agreement (ISSA). A draft ISSA was prepared in June 1997; the final ISSA is expected to be prepared in April 1998. POC: MAJ Dell'Orco, DSN 943-8100 or 303-361-8100.

USACHPPM EUROPE - Landstuhl, Germany

PUBLIC HEALTH REPORT

The Epidemiology Division has published the winter issue, Europe Public Health Report. It is a publication developed for health care providers and commanders throughout U.S.Army Europe as a means of disseminating current public health information. To receive a copy of this publication and be placed on the mailing list contact the Epidemiology Division, -Europe. POC: Ms. Pohle, DSN 486-8546, or write: Cdr, USACHPPM-EUR, ATTN: MCHB-AE-ME, CMR 402, APO AE 09180.

DEPLOYING NEW AIR SAMPLING TECHNOLOGY TO BOSNIA

A team of engineers and technicians deployed five new Air Metrics™ MiniVol portable air samplers to Bosnia in support of Operation Joint Guard. These samplers were sent by the Deployment Environmental Surveillance Program (DESP). After establishing the initial sampling sites, the USACHPPM-EUR team trained preventive medicine personnel from the 261st Area Support Medical Battalion on the siting, operation, and maintenance of the samplers.

The MiniVol samplers are especially useful during contingency operations, compared to the high-volume air samplers which were previously deployed to Bosnia. The MiniVol sampler is an ambient air sampler which was developed, in part, by the U.S. Environmental Protection Agency (USEPA). The DESP is conducting an evaluation of the MiniVol sampler along with other commercially available equipment for assessing environmental health risks during deployments. Although the MiniVol is not a reference method sampler, the results approximate reference method air quality data. This has been proven since 1995 when the Ambient Air Quality Management Program established a MiniVol network at Fort Irwin, California. In contrast to the reference method high-volume samplers, these portable samplers operate using low-flow technology. The samplers are capable of sampling the ambient air for particulate matter and non-reactive gases. The samplers which were deployed to Bosnia are equipped to collect particulate matter below 10 microns in diameter (PM_{10}) on a 47 millimeter filter. These samplers are constructed of PVC pipe making them durable under a wide range of weather conditions.

The MiniVol samplers may be operated using AC or DC power and are operated by a programmable timer which allows for six 24-hour sampling episodes over a one-week period. When operating in DC mode, these samplers utilize a weather-tight lead acid battery which will allow the sampler to run continuously for 24 hours. The samplers are also equipped with mounting brackets which may be mounted on a variety of objects including trees, tripods, fence posts, and utility poles. All of these features combine to make the MiniVol a much more useful and field-friendly alternative to its much larger high-volume counterparts. The concept of "field friendly" equipment which occupies less space while giving good results is essential to the success of environmental surveillance in our modernized Army.

The samplers which were deployed to Bosnia will remain there indefinitely so that they may be used to obtain air data in any area that the Command has a concern about the ambient air quality. A team from USACHPPM-EUR will deploy periodically to train preventive medicine units that deploy to Bosnia or as needed to correct equipment problems or operational deficiencies. All samples collected in Bosnia will be shipped to USACHPPM-EUR where they will be processed for shipment to USACHPPM-Main. Upon arrival at USACHPPM-Main, the filters will be weighed (to determine particulate matter concentration) and analyzed for chemical constituents and heavy metals. Results and health risk interpretations are then provided by the USACHPPM-Main to the forward medical authority who ensures that the results are incorporated into the Command's risk management process. POC: CPT Billy A. Pate, DSN 486-7047.

USACHPPM PACIFIC - Camp Zama, Japan

THE MOVE FROM SAGAMI

The USACHPPM-PAC recently moved from Sagami to Building 715, Camp Zama. The $9.6 million dollar building, paid for by the Japanese government, and the nearly $600,000 worth of new equipment, paid for by the U.S. Army Medical Command, improves the unit's ability to perform its mission.

"The opening of the new building is an affirmation of the growing recognition of the importance of and the Army's commitment to prevention in military medicine," said Col. Harry Quebbeman, Commander, USACHPPM-PAC.

Reliable utilities is one benefit of the new building over the World War II era building at Sagami. Reliable air conditioning is of particular importance, as most of the laboratory equipment must be operated within specific temperature ranges that could not be easily maintained in the old facility. Two pieces of sensitive equipment, an optical emissions spectrophotometer and a plasma mass spectrophotometer, increase the capability of the laboratory to detect trace levels of metals, like mercury, in environmental samples. USACHPPM-PAC tests water and soil samples from throughout the Pacific on an almost daily basis.

While a new building and equipment mean a lot, nothing can substitute for location. Trips to such offices as personnel or finance, which for most units involve a few minutes of travel time, consumed a minimum of an hour when the unit was located at Sagami Depot. The move also simplified the delivery of environmental samples to the laboratory.

The new facility includes a new training classroom for the soldiers of USACHPPM-PAC as well as the capability to hold training for other units in the Tokyo area. While moving improves the unit's ability to conduct its traditional missions, USACHPPM-PAC has been given the mandate of providing medical force protection, and moving makes that job easier also. Force medical protection improves individual and unit readiness while contributing to overall force protection.

In his speech during the opening ceremonies of the new facility, Col.Quebbeman summarized the move by saying that the facility will allow USACHPPM-PAC to optimize productivity and to achieve their organizational vision, "To truly be the Army's Center of Excellence for Preventive Medicine Support in the Pacific."

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